FIONA SEAMAN-THORNTON BSc Hons

EXPLORING CHANGE PROCESSES IN AN EQUINE-ASSISTED INTERVENTION

Section A: What psychological benefits can equine-assisted interventions offer children and young people?

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Section B: "Taking care of a horse changed my life": Developing a grounded theory of change in an equine-assisted intervention for young people

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Summary

Section A presents a review of recent literature exploring the effects of equine-assisted interventions (EAIs) for children and young people (CYP). It summarises the nature of interventions offered, and the quantitative and qualitative findings from eleven studies. The review highlights the diversity in the field in the nature of interventions, research methods, and identified areas of change. The variable findings were consistent with other research which attributes the diversity in the field to a lack of a clear underlying theory for EAIs. The lack of theory is suggested to be an important limiting factor in the development of conclusive evidence in the field. Implications for practice and research are discussed.

Section B presents a study exploring perceptions of change in order to develop a grounded theory of change processes in an EAI. Interview data from thirteen participants (seven CYP, 2 referrers, two facilitators, and two parents) was analysed using Glaserian grounded theory methodology. The proposed theory suggests a complex, multi-stage model which highlights key components of the EAI that are theorised as contributing to change. The theory is outlined in detail and considered in relation to wider research. Limitations and implications for practice and research are summarised.

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Section A: Literature Review

WHAT PSYCHOLOGICAL BENEFITS CAN EQUINE-ASSISTED INTERVENTIONS OFFER CHILDREN AND YOUNG PEOPLE?

Word Count: 8000 (371)

Abstract

Aim: This review aimed to offer a critical analysis of recent developments in literature exploring psychological effects of equine-assisted interventions (EAIs) for neurotypical children and young people (CYP) without physical or intellectual disabilities.

Method: A literature review was completed in September 2019 across four electronic databases. Sixty-seven studies were screened according to inclusion criteria, leaving eleven studies identified for analysis that were published since a previous review in 2015. Studies were summarised and quality was critically evaluated.

Results: Identified **s**tudies were diverse in their populations, interventions and research methodology. Consistencies in interventions were explored. Outcomes were similarly diverse, identifying numerous benefits. These included reducing challenging behaviours, increasing adaptive skills, and improving psychological wellbeing. Qualitative studies suggested further benefits considered possible mechanisms of change.

Conclusion: Conclusions that can be drawn about effectiveness of EAIs for this population continue to be limited by a lack of standardisation and research quality. As such, there is little robust evidence regarding the nature of benefits of EAIs. Despite this, emerging evidence is promising and suggests that EAIs may be beneficial for CYP, particularly those who struggle to engage in talking therapies. Implications for further research and clinical practice are discussed.

Keywords: Equine Assisted Interventions; Horse; Children and Young People; Evidence; Psychological difficulties

Introduction

Mental Health Problems in Children and Adolescents

Mental health difficulties in children and young people (CYP) have become increasingly prevalent in the UK and are an area of growing concern as reflected by recent media coverage (Campbell, 2018; Donnelly, 2018; Gunnel, Kidger & Elvidge, 2018; O'Hara, 2018; Pitchforth et al., 2018). In 2017, the number of 5 to 19-year-olds diagnosed with at least one mental health disorder, such as depression or anxiety, was estimated at 12.8% (approximately 1 in 8; NHS Digital, 2018). This high prevalence has severe consequences, with research indicating that suicide was the leading cause of death for CYP aged between 5 and 19 in 2017 (ONS, 2017).

The demand on health services has increased accordingly, with rates of hospital presentations for self-harm in 13 to 16-year-old females rising by 68% from 2011 to 2014 (Morgan et al., 2017). Calls to emergency services regarding children experiencing psychological distress rose by one third over the past five years (Narwan, 2018). Concerningly, Public Health England (2017) indicates that up to half of the mental health difficulties in CYP typically continue into adulthood.

Current Guidance

The National Institute for Health and Care Excellence (NICE) recommends offering psychological therapies such as cognitive-behavioural therapy to support CYP with mental health difficulties such as anxiety or mild depression (NICE, 2013; 2019). A stepped approach is recommended where, if initial short-term interventions do not lead to improvements, further longer-term psychological therapies are indicated. Following this, pharmacological interventions may also be considered (NICE, 2019).

Limitations of Talking Therapies

Despite NICE guidance and the growing concern regarding CYPs' mental health, recent governmental reports indicated that only approximately 25% of CYP with mental health disorders received NHS-funded treatment in 2016-17 due to limitations in service provisions (Committee of Public Accounts, 2019). Of CYP who are *not* engaged with mental health services, many are considered 'at-risk' of experiencing negative life outcomes following early traumatic and stressful life events, such as abuse and neglect. It has been suggested that adverse life events may be associated with CYP facing greater barriers to engaging with services. For example, due to a lack of financial or practical support to access services; or being deterred by the nature of talking therapies, making them 'hard-to-reach' (Cobbett, 2016; CQC, 2017; Ewing, MacDonald, Taylor & Bowers, 2007; Lentini & Knox, 2009). Therefore, finding alternative ways to engage CYP in therapy is an important challenge for mental health professionals.

Equine-Assisted Interventions

Over recent years there has been increasing interest and development in the field of animal-assisted interventions which involve the use of animals for therapeutic purposes. Of these, equine-assisted interventions (EAIs) have shown a rise in popularity since first reported in the 1960s. EAIs historically focused on supporting populations with physical and intellectual disabilities; subsequently expanding to include mental health difficulties in 2008 (Holmes, Goodwin, Redhead & Goymour, 2012; Serpell, McCune, Gee & Griffin, 2017). The field has since evolved to include a variety of interventions designed to support participants' health and wellbeing (De Santis et al., 2017).

The term EAI is used in this review as an umbrella term to capture a range of interventions involving horses which aim to benefit CYP psychologically (including social,

cognitive, behavioural, and emotional benefits). There is wide variation in terminology used by practitioners to describe interventions despite guidance offered by organisations such as the International Association of Human-Animal Interaction Organisations (2018). EAI subsets include equine-assisted activities, equine-assisted therapy, equine-facilitated therapy, and equine-facilitated psychotherapy. Some naming conventions appear to reflect the staff facilitating interventions (i.e. psychotherapy if led by a qualified psychotherapist), however, this is not consistent.

At present, there are no overarching professional bodies regulating or systematising EAI practice. Several organisations offer certifications, standards for practice, and codes of ethics for EAIs; including PATH (The Professional Association of Therapeutic Horsemanship International, 2019), and EAGALA (Equine Assisted Growth and Learning Association, 2018a) - outlined in more detail by Brandt (2013).

Current Evidence

Historically, EAIs have focused on supporting people with disabilities. As such, a large proportion of research focuses on CYP with physical or intellectual disabilities, or neurodevelopmental disorders (such as autism spectrum disorder [ASD]). Recent reviews highlighted emerging evidence supporting use of EAIs for CYP with cerebral palsy or ASD (ASD – Peters & Wood, 2017; Tan & Simmonds, 2019; Cerebral palsy - Zadnikar & Kastrin, 2011). These reviews suggested that EAIs may particularly benefit CYP who have difficulties in the following areas: physical (i.e. motor control, postural control, balance, sensory processing,); social (i.e. social interaction, communication); and behavioural (i.e. behaviours that challenge).

In recent years, research exploring EAIs has broadened to consider evidence across a wider variety of populations, including CYP with psychological, behavioural, social or emotional

difficulties (e.g. Lentini & Knox, 2015). Reviews have suggested that EAIs may be particularly beneficial for CYP identified as 'at-risk' or 'hard-to-reach' who may struggle to engage in typical talking therapies (summarised by Frewin & Gardiner, 2005; Lentini & Knox, 2009; 2015). Beneficial effects have been observed in CYP with behavioural and psychological difficulties, with some research suggesting greater benefits for CYP who had experienced abuse or neglect (Schultz, Remick-Barlow & Robbins, 2007).

Researchers have suggested that EAIs can facilitate attachment with the animal, fulfilling a fundamental need (Bachi, 2013; Kruger & Serpell, 2006). CYP in the identified populations may share a difficulty forming attachments to others due to innate difficulties in developing typical communication or social skills, or the experience of adverse or traumatic experiences. This may offer one explanation as to why these CYP may struggle to engage in typical talking therapies and find particular benefit from EAIs.

A recent review suggested many psychological benefits of EAIs across various populations, with most supporting evidence in these ASD or 'at-risk' populations of CYP (Lentini & Knox, 2015). The review offered an overview of forty-seven studies published between 2008-2014 that explored EAIs with CYP. The review summarised the nature of the EAIs and any qualitative and quantitative findings, or conceptual and theoretical developments in the field (Lentini & Knox, 2015). Reported benefits of EAIs (positive changes reported by more than one study) included improvements in symptoms of "anxiety, depression, inattention, social skills, self-esteem, emotional development/empathy and self-regulation" (pg. 299; Lentini & Knox, 2015). The review concluded that the evidence for EAIs was promising and offered initial support for their use. However, the authors acknowledged that findings were limited by a lack of coherence in methodologies and terminologies. Further, they identified ongoing issues in the

field including the lack of randomised controlled trials, adequate sample sizes, and standardised outcome measures, thus reducing the quality of the evidence. The review offered a broad overview of research which did not include a detailed critique of the research included or a synthesis of the findings, which would have been difficult to complete across such a broad sample of studies.

Similar conclusions were drawn from broader reviews exploring psychological benefits of EAIs for *all* ages (Kendall et al., 2015), and in more focused reviews exploring the effects of EAIs for CYP who had experienced trauma (Phenow, 2016), or were at-risk (Wilkie, Germain & Theule, 2016). Benefits similarly appeared in areas of self-esteem, confidence, social understanding, and in developing attachments (Phenow, 2016; Wilkie et al., 2016). Again, studies highlighted issues of small sample sizes, inadequate control groups, inconsistencies in methodology and reported study variables, lack of follow-up, and a lack of a unified theory underlying therapeutic practice. Each review offered recommendations to researchers to support the development of a robust evidence base in the field; and to clinicians to consider the limitations of existing research. A critical appraisal of the emerging literature is therefore essential in considering evidence regarding benefits of EAIs and an update of research in the area is warranted considering the time since the last review.

In summary, despite a lack of systematisation, EAIs appear to offer an additional resource to support CYP to improve their psychological wellbeing in the context of limited NHS resources, difficulties engaging CYP in mental health support, and the need to offer alternatives to typical talking therapies. Current evidence suggests promising benefits of EAIs; however, a robust evidence base is lacking due to limited research and issues in research quality. As such, recommendations for clinical practice are limited and tentative.

Aim and Scope of This Review

This review intended to explore what recent evidence exists to support the use of EAIs to promote psychological benefits in CYP, and to consider the implications for future research and clinical practice. To achieve this, this review aimed to critically evaluate research exploring the effects of EAIs for CYP published since the last similar review by Lentini and Knox in 2015, exploring in greater depth the nature of interventions, similarities and differences in methodologies, and synthesising and critiquing recent quantitative and qualitative evidence.

This review aimed to offer a narrower focus than Lentini and Knox (2015), by focusing on the effects of EAIs on CYP who do not primarily have neurodevelopmental disorders, or physical or intellectual disabilities. This focus intended to minimise variance in participants of EAIs to facilitate meaningful comparisons across studies and enable critical examination of emerging evidence.

In contrast to reviews focused on particular diagnostic populations, such as Phenow (2016), this review took a non-diagnostic stance. This can be argued to reflect good practice in CYP populations where psychiatric difficulties can be viewed as more changeable, and diagnostic labels unhelpful (Price-Robertson, 2018). This stance also facilitated inclusion of any study focused on improving psychological wellbeing in CYP.

For the purpose of this review: psychological wellbeing is defined as any behavioural, emotional, social, or cognitive factor; and CYP were defined as below 19 years, in line with NICE guidance (2019).

The review aimed to answer three main questions:

1. What is the nature of EAIs being conducted to support CYP with their psychological wellbeing?

2. What quantitative evidence is there of EAIs improving psychological outcomes in CYP?
3. What qualitative evidence is there to understand how EAIs affect psychological outcomes in CYP?

Methodology

Search Strategy

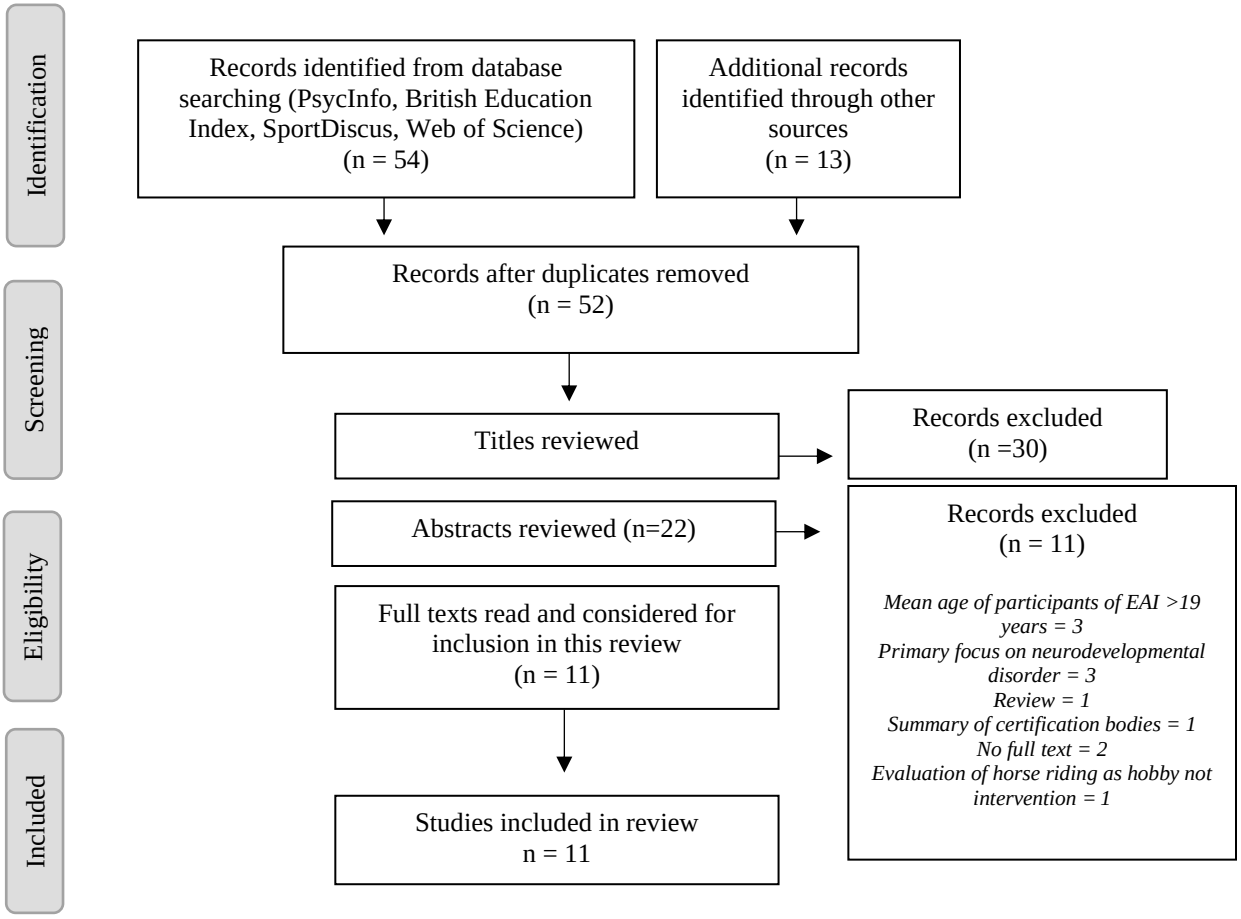
A systematic literature review was conducted on 16th September 2019 using four electronic databases (PsycInfo, British Education Index, SportDiscus, and Web of Science). The search terms used were: (adolescen* OR youth OR young OR child*) AND (equine OR horse) AND (intervention OR therapy). No time or geographical limits were imposed on the search. The references of identified studies were hand-searched for further relevant literature and Google Scholar was searched for grey literature.

Sixty-seven studies were identified and screened through their titles, abstracts, and full texts to ensure they met inclusion criteria (Table 1). A PRISMA flow diagram (Moher et al., 2009; Figure 1) summarises this process. Eleven studies were identified which are evaluated in this review.

Table 1. *Inclusion and Exclusion Criteria*

Inclusion Criteria	Exclusion Criteria
• Participants of *EAIs* being evaluated (not necessarily of the *studies*) were CYP (mean age of sample = <19) • Psychological outcomes explored • Focused on equine assisted interventions delivered *directly* to young people • Publication date of 2015 onwards • Full text available in English • Journal article / dissertation	• Primary focus on CYP participants of EAIs with neurodevelopmental disorders, learning/intellectual disabilities, or physical disabilities • Not in English • Full text not available • Review of literature

Figure 1. PRISMA Flow Chart of Searches (Moher et al., 2009)



Data Extraction

An overview of the reviewed studies is provided in Table 2.

Structure of Review

This review summarises the interventions conducted across identified studies, considering population and methodology, and discusses key quantitative and qualitative findings before discussing the quality of the identified studies and connection to past research. Implications for future research and clinical practice are considered.

Table 2. *Data Extraction Table Summarising Reviewed Studies*

#	Study	Participants (Age; Gender) ***Ethnicity***	Design	Equine Intervention	Main Findings
1	Boshoff, Grobler & Nienaber (2015; South Africa)	39 adolescents in a "custodial school of industry" with "problem behaviour" (aged 14-18; 100% male) who met literacy requirements. 10 participants assigned to each of 4 groups *18 "Coloured", 12 White, 9 Black*	(Quantitative). Experimental Solomon four-group design randomly allocated participants to intervention/control groups. Control = normal therapeutic activities at school. Participants reported level of coping and wellbeing pre- (for half of each group) and post-intervention (*The Satisfaction with Life Scale;* Diener, Emmons, Larsen & Griffin, 1985*;* and *The Coping Orientations to the Problems Experienced Scale,* Carver, Scheier & Weintraub, 1989).	Equine Assisted Therapy (EAT). Horses used in 8 structured sessions to help boys learn coping skills through experiential learning.	Significant improvement in subjective wellbeing, problem-focused coping, emotion-focused coping, and dysfunctional coping following intervention.
2	Kendall & Maujean (2015; Australia)	Horse Play: 16 adolescents recruited through youth and family services who had not responded to traditional interventions (mean age 15.44; aged 12-22; 11 boys, 5 girls). 4 participants dropped out. Control Group: 10 adolescents of a similar background recruited from a vocational school (mean age 15.2; ages 14-16; 7 male). Not exposed to any treatment. *Ethnicities not reported.*	(Quantitative). Quasi-experimental pre and post questionnaires completed by participants measuring self-esteem (*Rosenberg Self-Esteem Scale*; RSES; Rosenberg, 1965) and self-efficacy (*General Self-Efficacy Scale*; GSE; Schwarzer & Jerusalem, 1993). The Horse Play group also completed measures at the mid-point (Week 5). Instructors completed measures to assess YP's behaviours each week (*Social Behaviour Observation For*m, adapted by authors from Chandler, 2005). Case Managers completed questionnaires pre and post intervention on participants' strengths and challenges	Equine-facilitated Psychotherapy (EFP) programme designed by the authors – 'Horse Play'. In line with the model of Parelli Natural Horsemanship.	1. Significant increase in self-esteem and self-efficacy in intervention group from pre to post. 2. Significant difference between intervention and control group post-intervention in self-esteem but not self-efficacy (large magnitude of difference in self-efficacy). 3. Significant improvement in rated social behaviour in final week compared to first week in Horse Play group. (Data not collected for control group). 4. Significant improvement in 5/6 areas rated by Case Managers. (Not in participants' ability to work on their own). 5. Qualitative finding in words selected by participants to describe their learning each week – focus on working collaboratively (e.g. team

			(idiosyncratic Likert scales measuring ability to work with others, ability to work on their own, ability to follow rules, ability to get work done, confidence to try new things, and energy level).		player, communication), interpersonal sensitivity (patience, tolerance) appeared early in programme. Later in programme, words selected suggested greater personal stability (e.g. confidence, commitment), or personal growth or complex concepts (e.g. leadership, balance).
3	Ho, Zhou, Fung and Ka. (2017; Singapore)	Two cohorts of YP (all aged approximately 13) recruited from a specialist school for YP with difficulties coping in mainstream education. Identified as "at risk for academic or life failure". 2013 Cohort: 75 YP (45 males) and 82 (58 males) in control. Four classes chosen at random to form EAI group, remaining assigned to control. 2014 Cohort: 58 YP (38 males) and 59 controls (38 males) YP completed intervention in cross-over design. Students had no "severe physical or mental disability" but diagnoses were unknown. Four classes chosen at random to form first EAI group, remaining assigned to wait-list control to complete EAI in second semester. *Ethnicities not reported*.	(Quantitative). Cohort 1: Experimental design with control group not offered intervention. Cohort 2: Cross-over design. Students were rated a week before, mid-way, and a week post-intervention on idiosyncratic "Habits of Mind" Likert scales by teachers (benchmarking process at each time point). Academic performance was also measured at the end of each semester (grade point average).	Equine Assisted Learning (EAL). 16-week intervention conducted in line with the EQUAL programme manual. EQUAL was designed for this study.	1. Intervention led to progressive improvement in all areas measured - all capturing "character-building" (Thinking flexibly; Taking responsible risks; Managing impulsivity; Listening with understanding and empathy; Persistence). 2. Significant intervention-by-time interactions were found in all areas measured excluding 2014 Semester 1 cohort on managing impulsivity scale. 3. The same gradual improvement was observed in two separate cohorts across 3 time periods. 4. Significantly higher baseline levels observed in both 2014 groups who were about to start intervention than other group – possible anticipatory effects/demoralisation in other group. (No differences in baseline levels between groups in 2013). 5. Change correlated with educational performance.

4	Gibbons, Cunningham, Paiz, Poelker & Chajon (2017; Guatemala)	37 adolescents (mean age 18.22; aged 15-23; 14 girls, 23 boys) recruited from a school psychologist and identified as 'at-risk' and coming from difficult backgrounds (e.g. poverty, abuse and violence at home). *28 Ladino (mixed indigenous and European descent); 4 Indigenous* Additional 18 family members engaged in focus groups	(Quantitative & Qualitative). Wait-list control design with random assignment. Participants completed questionnaires at 3 time-points measuring leadership, emotional regulation, aggression and interpersonal response to threat. Youth *Leadership Life Skills Development* (YLLSD, Smith, Gentry, & Ketrig, 2005; *Transgression-Related Interpersonal Motivations Inventory* (TRIM; McCullough et al., 1998); *Normative Beliefs about Aggression Scale* (NBAS; Huesmann & Guerra, 1997); *Emotion Regulation Questionnaire* (ERQ; Gross & John, 2003); *Cognitive Emotion Regulation Questionnaire – Blaming Others* (CERQ; Garnefski, Kraaij, & Spinhoven, 2001). Mentors rated aggression and prosocial behaviour subscales on the *Child Behaviour Checkl*ist (CBCL; Ladd & Profilet, 1996) 17 participants and 18 family members engaged in focus groups completed 2-weeks post-intervention. Analysed using thematic analysis.	Equine Facilitated Workshop (EFW). 2-day equine-based workshop.	1. Self-reported leadership was significantly greater for intervention group at Time 2 (YLLSD) 2. No significant differences in TRIM scores at Time 2 3. No significant differences in attitudes towards aggression at Time 2 (NBAS) 4. No significant change in scores on ERQ or CERQ. However, only two subscales analysed due to poor internal consistency in responses. Likely due to difficulties understanding translated questionnaires. 5. Mentor reports of aggression significantly decreased for intervention group (CBCL). 6. No significant difference in mentor reported prosocial behaviour between groups at Time 2 (CBCL) 7. Focus groups with participants suggested multiple benefits including emotion regulation, empowerment and positive emotions. 8. Focus groups with families highlighted themes of emotion regulation, better interpersonal interactions, empowered leaders, and learning from horses 9. Sustained reduction in mentor ratings of aggression for first group at time points 2 and 3 (no significant difference in scores) and in increased self-reported leadership
5	Tsantefski, Briggs, Griffiths	41 children (mean age 10.26; 24 females, 17 males) exposed to 'problematic parental substance	(Quantitative). Single group pre and post comparison.	12-week Equine Assisted Therapy (EAT) programmes	1. Parents reported a significant reduction in total difficult behaviour and emotional problems following

	&Tidyman (2017; Australia)	use' (PPSU) engaged in 1 of 5 EAT programmes delivered between 2012 and 2015. Recruited through flyers and newsletters for related services. *Ethnicities not reported*.	Parents (n=41) and schoolteachers (n=31) completed the *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 2001) pre- and post-intervention to assess psychological wellbeing (specifically reduced difficult behaviours)		intervention (SDQ). Significant reductions post-intervention in emotional problems and hyperactive behaviour subscales. Reductions (non-significant) in peer problem behaviours and conduct problems. Non-significant increase in pro-social behaviours. 2. Teachers reported a reduction (near significance) in total difficult behaviours post-intervention (SDQ). Lack of significance possible due to lack of power from smaller sample size of teachers. Subscales indicated significant reductions in hyperactivity. Non-significant changes in all other areas but trends in hypothesised directions.
6	McNamara (2017; Australia)	10 female mental health professionals and equine specialists from 6 EFT clinics (aged 24-65 years - working with CYP aged 7-17 years). *Ethnicities not reported.* Difficulties of CYP supported not specified.	(Qualitative). Interviews with facilitators of EFT lasting 30-45 minutes. Thematic analysis on interview data.	All facilitators delivered EFT in line with EAGALA models across various sites in Australia.	1. Discussing clinical practice – facilitators highlighted variations in practice but a tendency to structure sessions in 3-parts (beginning – check in, middle – practical task, end - discussion), and a lack of parental involvement was highlighted 2. Discussing mechanisms of change – facilitators highlighted factors such as a safe environment, use of metaphors, unique abilities of the horse, client insight, and a problem-solving approach. 3. A lack of research into mechanisms of change was highlighted 4. Discussing activities within interventions – facilitators reported these being loosely based within an EAGALA framework, being 'organic' (unplanned), and the

					differing roles of mental health practitioner and equine practitioners. 5. Facilitators highlighted a lack of a clear underlying theoretical model
7	Wilson, Buultjens, Monfries & Karimi (2017; Australia)	8 facilitators working with adolescents experiencing depression and/or anxiety (6 'mental health professionals' and 2 horse specialists) *Genders and ethnicities not reported.*	(Qualitative). Interviews with facilitators of EAP lasting 30-45 minutes. Thematic analysis of interview data.	Facilitators all delivered EAP in line with EAGALA guidelines across various sites in Australia.	1. Nature of EAP - Effectiveness thought to be due to the experiential nature of EAI – able to 'do' something different, experiment with new behaviours. The role of the horse was identified as important – non-judgmental, able to develop relationships, and able to reflect behaviours to participants 2. Clinical implications - Various benefits identified including increased confidence, self-esteem, and assertiveness; and decreased "undesirable behaviours" 3. Prior experience of horses reported to reduce immediate effectiveness of therapy 4. Practice of EAP – Some therapists drawn to area due to own passion with horses. Many wanted to address gap in services for hard to treat CYP. Development in the field thought to be restricted by general lack of understanding of EAI
8	Dunlop & Tsantefski (2018; Australia)	33 children (median age 10; aged between 7 to 13; 18 girls and 15 boys; 5 of unknown gender dropped out) exposed to 'problematic parental substance use' (PPSU) who engaged in the Horse Club programme across four sites in Australia.	(Qualitative). Interviews completed at the end of each program. Interviews lasting 5-10 minutes. Thematic analysis of interview data	Equine Assisted Therapy (EAT). One 2hr session per week over 9 weeks. Sessions focused on ground-based horsemanship activities progressing in difficulty and aiming to build somatic awareness and mindfulness	1. EAT was beneficial for children exposed to PPSU 2. Benefits due to offering an environment which is <u>safe and secure</u> – horse resembles secure attachment figure; children can be themselves; children experience happiness.

		Ethnicities not reported.		capacity. Run as a group of 5-10 participants.	3. Where children are supported to develop personally and socially by mastering fears, making new friends and improving interpersonal behaviours
9	Kang, Jung, Park & Han (2018; Korea)	15 adolescents with 'internet gaming disorder' (IGD) and insecure attachment (mean age 15.6; all male; recruited from a hospital seeking diagnosis) Control: 15 adolescents with no disorder and secure attachment (mean age 15.7; all male; recruited by word of mouth/flyers) *Ethnicities not reported.*	(Quantitative). Quasi-experimental design with intervention offered to both clinical and non-clinical groups. Pre- and post-intervention questionnaires completed - the *Korean Experiences in Close Relationships Scale Revised version* (K-ECRS; Kim & Lee, 2005); the Korean *Child Depression Inventory* (K-CDI; Cho & Lee, 1990); *Young's Internet Addiction Scale (*YIAS; Young, 1998; Lee, Oh, Cho, Hong & Moon, 2001); the *Korean ADHD Rating Scale* (K-ARS; DuPaul, 1991; So, Noh, Kim, Ko & Koh, 2002), and a resting state fMRI scan at baseline and post intervention.	7-day intensive intervention of Equine Assisted Activities and Therapies (EAAT)- residential programme.	1. Significantly higher baseline levels of avoidant attachment, anxiety, internet addiction, and depression in the IGD group. 2. Greater improvement (reduction) in IGD group in avoidant attachment, internet addiction and depression compared to healthy control. 3. No significant differences between groups in anxious attachment or ADHD scores. 4. Significant correlation between reduced avoidant attachment and reduced internet addiction. 5. Baseline MRI differences in IGD group 6. Evidence of functional connectivity improvements in MRI scans for all participants in frontal lobe and amygdala. Improved connectivity also observed in different pathways between groups. 7. Significant negative correlation between functional connectivity and avoidant attachment.
10	Burgon, Gammage & Hebden (2018; UK)	Seven young people (aged 11-15 years; one male & six female). Referred by social services or parents/carers with diagnoses of emotional/behavioural difficulties. Selected based on discussion between staff and	(Theoretical discussion with Qualitative Components) Psychotherapeutic case study research approach – composite vignettes of participants' experiences incorporated into	EAT/L – Site offered different interventions to suit identified needs. CYP attended both EAL and EAT sessions.	1. Identified philosophical/psychological theories/models included: a. Non-violent communication b. Object relations c. Play and drama therapy d. Mindfulness

		parents/carers to identify CYP with suitable emotional stability and understanding of research to give informed consent. *Ethnicities not reported.*	discussion on relevant theories supporting EAT/L.	EAT sessions were individual with a psychotherapist/ counsellor and horse handler. EAL sessions were usually small groups with educational/learning emphasis	e. Attachment theory 2. The key role of relationships was highlighted (client – horse – therapist) as well as frame of a person-centered approach 3. Need for further well-designed longitudinal studies across different populations to improve understanding of reported effects within the field
11	Hemingway (2019; UK)	155 young people aged 8-18 who had started and completed the course during 2016-2018 (mean age 12.55; 97 females). A further 5 did not complete the course. Participants referred to the course for various social/behavioural/psychological difficulties. *Ethnicities not reported.*	(Quantitative). Pre- and post-outcome measures completed by the referrer (outcome 'star chart' – designed by the course). Data collected 2-months post-course from referrers on engagement with education; problem behaviours; relationships; and sense of identity (worse/no change/ positive change).	Five 2-hour sessions of an EAI delivered in one week. Ground-based activities with horses to develop skills based on Parelli Natural Horsemanship.	1. Overall, statistically significant improvement between pre- and post-scores in all measured dimensions (realistic planning; assertiveness; communication; calmness; engagement; focus/perseverance; empathy; taking responsibility). Suggests participants are learning embodied skills. 2. Follow-up questionnaires indicated positive changes for most participants in all areas. No statistical analysis. 3. Suggested feasibility of an RCT

***Studies are referred to in text by the numbers assigned to them in this table.**

Critical Appraisal

This review incorporates findings from eleven studies (five quantitative, four qualitative, one mixed-methods, and one theoretical paper with qualitative elements). The designs of identified studies were experimental (two studies); quasi-experimental (five studies); and thematic analyses (four studies). Eight studies primarily evaluated changes in participants (CYP) before and after EAIs (rated by either participants, parents, facilitators, teachers, or referrers); one study evaluated both CYP and family/carer perspectives on an EAI delivered to CYP; and two studies evaluated facilitator perspectives on EAIs delivered to CYP.

Given the variance in designs and guidance recommending the use of scales that do not give summary scores (Higgins & Green, 2011), the Specialist Unit for Review Evidence (SURE, 2015; 2018) critical appraisal checklists were used to evaluate identified studies. The SURE checklists evaluate key aspects of studies that are required in critical appraisal tools and were developed from widely-used checklists. For quantitative studies, the SURE checklist for experimental studies was used (Appendix A). For qualitative studies, the SURE checklist for qualitative studies was used (Appendix B). A summary of how each study was evaluated is shown in Table 3.

Table 3. *Summary of findings from critical appraisal checklists*

Author (Year)	Critical Appraisal Summary
1. Boshoff et al. (2015; South Africa)	2. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 3. Unclear – randomisation not described 4. No reported concealment of allocation to groups 5. No reported blinding 6. Yes. Intervention (EAI) and comparison (usual activities) described and appropriate 7. Yes. Ethics approval stated. 8. No reported trial protocols. 9. Yes. Groups similar at the start. 10. No. Small sample (10 per group) 11. Yes. Participants accounted for but unclear which group had 1 fewer participant 12. Statistical methods not clearly described. Multiple t-tests with no reported corrections. Unclear meta-analysis procedure. 13. Results were clear and well described. Reliable measures.

		14. No reported sponsorship/conflict of interest 15. Limitations were lack of female participants and small sample size. Conclusions matched abstract/text.
2.	Kendall & Maujean (2015; Australia)	1. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 2. No randomisation 3. No reported concealment of allocation to groups 4. No reported blinding 5. Yes. Intervention (EAI) and comparison (usual activities) described and appropriate. 6. No. Ethical approval not reported 7. No reported trial protocols 8. Yes. Groups were considered to be of similar background and age. 9. No. Small sample size 10. Yes. Participants all accounted for. 11. Statistical methods clearly described. 12. Results were clear and well described. Reliable measures. 13. No reported sponsorship/conflict of interest 14. Limitations were small sample size. Conclusions matched abstract/text.
3.	Ho, Zhou, Fung and Ka. (2017; Singapore)	1. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 2. Yes. Unreported method of randomisation. 3. No reported concealment of allocation to groups 4. No blinding 5. Yes. Intervention (EAI) and comparison (usual activities/waitlist) described and appropriate. 6. Yes. Ethical approval reported 7. No reported trial protocols 8. No. Groups unable to be matched due to lack of demographic data. 9. Unclear. No power calculation. 10. Yes. Participants all accounted for. No reported dropouts. 11. Statistical methods clearly described. 12. Results were clear but lasting effects were not considered. Good inter-rater reliability reported for idiosyncratic measure. 13. Sponsorship reported. 14. Limitations were lack of matching of groups, unstandardised measure, and inability to rule out novelty effects on outcomes (rather than intervention). Conclusions matched abstract/text.
4.	Gibbons, Cunningham, Paiz, Poelker & Chajon (2017; Guatemala)	1. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 2. Yes. Unreported method of randomisation. 3. No reported concealment of allocation to groups 4. No reported blinding 5. Yes. Intervention (EAI) and comparison (waitlist) described and appropriate. 6. No. Ethical approval not reported 7. No reported trial protocols 8. Unclear. No reported matching and possible baseline differences in some measures. 9. No. Small sample size. 10. Yes. Participants all accounted for. 11. Statistical methods clearly described. 12. Results not fully detailed (not all scores reported, standard deviations not reported). Issues with reliability with some translated measures. 13. No reported sponsorship/conflict of interest. 14. Limitations were small and homogenous sample, presence of programme director in focus groups, and low reliability in measures. Conclusions matched abstract/text.
5.	Tsantefski et al. (2017; Australia)	1. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 2. No randomisation (single pre/post design) 3. No concealment of allocation to groups 4. No blinding 5. Yes. Intervention (post-EAI) and comparison (pre-EAI) described and appropriate. 6. Yes. Ethical approval reported 7. No reported trial protocols 8. Yes. Same sample.

		9. Unclear. No power calculation. 10. Yes. Participants all accounted for. 11. Statistical methods clearly described. But no corrections reported for multiple t-tests. 12. Results clearly described. 13. No sponsorship/conflict of interest. 14. Limitations were a lack of a randomised control group, reliance on perceptions of parents with history of PPSU/teachers. Conclusions matched abstract/text.
6.	McNamara (2017; Australia)	1. Partially. Clear question, setting, perspective, and evaluation. Intervention specified but details not provided across participants. 2. Yes. Qualitative method appropriate. But not justified. 3. Yes. Sampling strategy described and justified. 4. Yes. Method of data collection described and appropriate. 5. No. Relationship between researcher and participants not explored. 6. Yes. Ethical issues clearly discussed. 7. Yes. Data analysis process clearly described and justified. 8. Yes. Findings are credible. 9. No sponsorship/conflict of interest reported. 10. Limitations – small sample size. Conclusions consistent with abstract and text.
7.	Wilson et al. (2017; Australia)	1. Partially. Clear question, setting, perspective, and evaluation. Intervention specified but details not provided across participants 2. Yes. Qualitative method appropriate and justified. 3. Yes. Sampling strategy described and justified 4. Partially. Method of data collection described and appropriate. However, setting not specified. 5. Yes. Relationship between researcher and participants clarified. 6. Partially. Ethical approval reported. Consent not clearly discussed. 7. Yes. Data analysis process clearly described and justified. 8. Yes. Findings are credible. 9. No sponsorship/conflict of interest reported. 10. Limitations – solely therapist perspective (and possible bias of own passion for horses); small sample size. Conclusions consistent with abstract and text.
8.	Dunlop & Tsantefski (2018; Australia)	1. Yes. Clear question, setting, perspective, intervention and evaluation. 2. Yes. Qualitative method appropriate and justified. 3. Yes. Sampling strategy described and justified 4. Yes. Method of data collection described and appropriate. 5. Yes. Relationship between researcher and participants clarified. 6. Yes. Ethical approval reported. Consent procedure described. 7. Yes. Data analysis process clearly described and justified. 8. Yes. Findings are credible. 9. No sponsorship/conflict of interest reported. 10. Limitations – no analysis of participants who dropped out; no participant validation of findings; single intervention; small sample size. Conclusions consistent with abstract and text.
9.	Kang, Jung, Park & Han (2018; Korea)	1. Yes. Clear question. Population, intervention, control group and outcomes clearly specified 2. No randomisation. 3. No concealment of allocation to groups 4. No blinding 5. Yes. Intervention (IGD) and comparison (healthy control) described and appropriate. 6. Yes. Ethical approval reported 7. No reported trial protocols 8. No. Baseline differences were reported. 9. No. Small sample size. 10. Yes. Participants all accounted for. 11. Yes. Statistical methods clearly described. 12. Yes. Results fully detailed. 13. No reported sponsorship/conflict of interest. 14. Limitations were: only male participants; small sample size; no exploration of maintenance of effects; confounding variable in residential setting. Conclusions matched abstract/text.

10.	Burgon, Gammage & Hebden (2018; UK)	1. Partial. Clear question, setting and intervention. Unclear if facilitator/research or client perspective, and unclear evaluation – how theories and supporting quotes were selected. 2. No. Qualitative method not clear or justified. 3. Yes. Sampling strategy described and justified 4. No. Method of data collection not fully described or justified. 5. No. Role of researcher/facilitator not clearly considered in text. 6. Partial. No ethical approval reported. Consent and ethics procedures described. 7. No. Data analysis process not clear. 8. Unclear. Methodology not reported – unclear how theories selected or how whether all participant views are represented. Example quotes are given and credible. 9. No sponsorship/conflict of interest reported. 10. Limitations not reported. Conclusions consistent with abstract and text.
11.	Hemingway (2019; UK)	1. Yes. Clear question. Population, intervention and outcomes clearly specified. No control group – pre/post only. 2. No. No randomisation. 3. No. No allocation to groups 4. No blinding 5. Yes. Intervention (post-intervention) and comparison (pre-intervention) described and appropriate. 6. Yes. Ethical approval reported 7. No reported trial protocols 8. Yes. Repeated measures design. 9. Unclear. Large sample but no power calculation. 10. Yes. Participants all accounted for. 11. Yes. Statistical methods clearly described. 12. Partially. Outcome measure results fully reported. Follow-up questionnaire not statistically analysed. 13. No reported sponsorship/conflict of interest. 14. Limitations were: no randomisation; unclear mechanisms of change – horse/facilitator/time/development; unvalidated idiosyncratic measure. Conclusions matched abstract/text.

Results

Overview of Studies and Participants

The eleven identified studies were conducted across six countries: South Africa, Australia (five studies), UK (two studies), Singapore, Guatemala, and Korea.

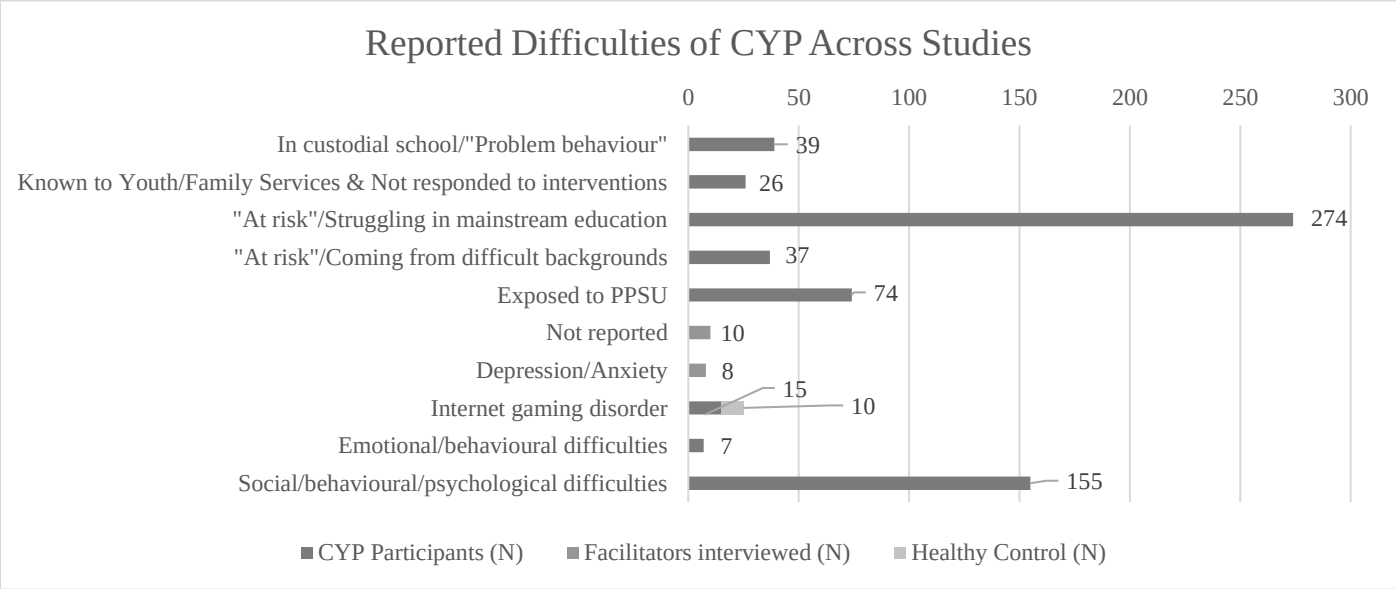
A total of 642 CYP engaged as participants across the studies, with an additional 18 facilitators and 18 family members also engaging in qualitative research. The age of CYP participants ranged from seven to 23 years (mean ages for all studies were under 19). Of CYP participants, 58% were male. Of facilitators interviewed, eight were female and 10 were not reported. Family members interviewed included 13 mothers, three sisters, and two fathers.

A summary of the CYP participants in the EAIs in included studies is shown in Figure 2.

Types of Equine Assisted Interventions

All studies varied in the nature of the intervention delivered. Details of interventions are summarised in Table 3. An overview of the proportion of EAI types explored in this review is shown in Figure 3.

Figure 2. Overview of reported difficulties of participants across identified studies



Interventions varied significantly in duration and frequency (as shown in Table 4 and Figure 4). The shortest intervention was 10 hours (five two-hour daily EAI sessions; [11]) and the longest was a seven-day residential EAAT programme with approximately 99 hours of scheduled activities (excluding times scheduled for sleep [9]). However, not all studies clearly detailed the length of interventions and the proportion of time allocated to different aspects of EAIs appeared to vary greatly (for instance, time spent riding, grooming, or engaging in discussions). Interventions varied in frequency from daily to weekly (mode = weekly, excluding unknown or unclear studies). The number of separate sessions offered varied between two and sixteen (mean = 8.6).

Figure 3. Distribution of participants across EAI subtypes (percentage of participants across studies).

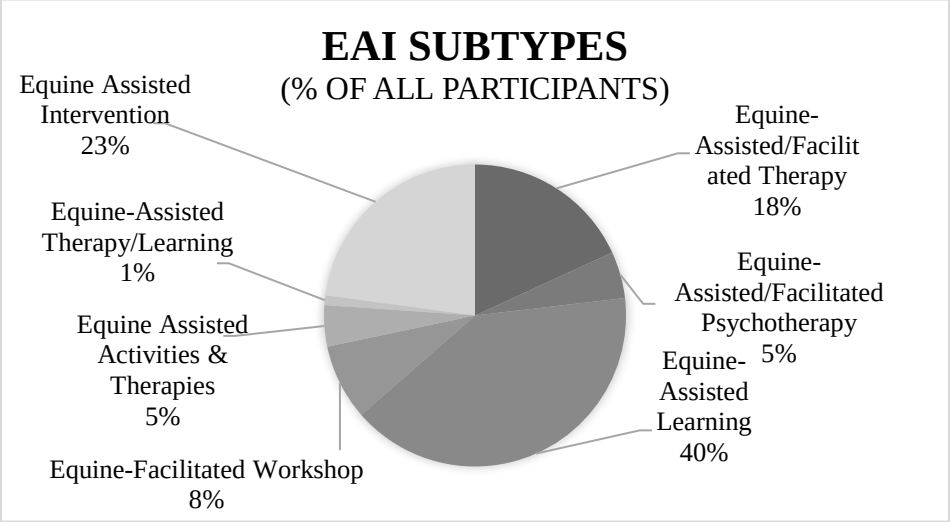
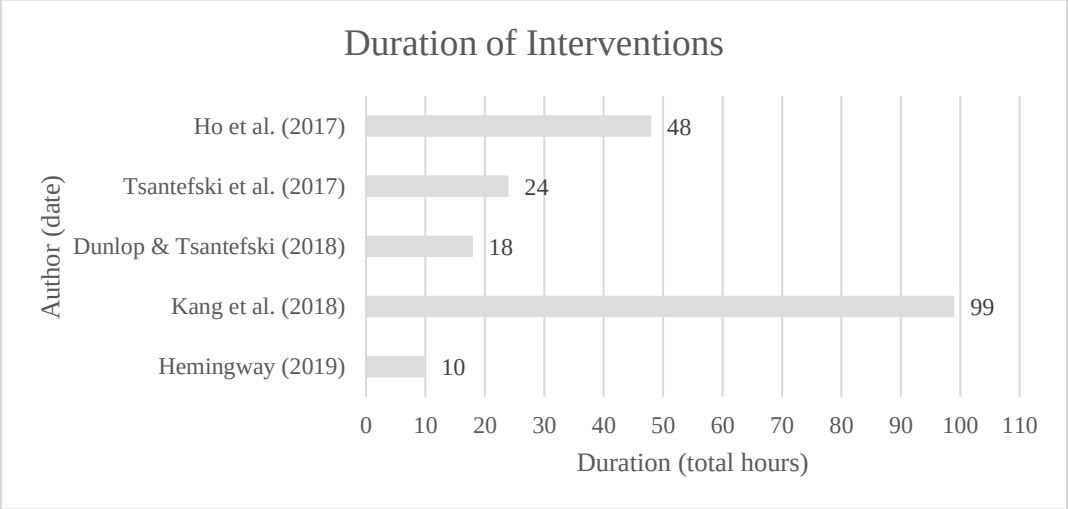


Figure 4. Overall duration of EAIs described in identified studies (excluding studies where duration was unclear or not applicable).



Eight studies reported group interventions although several of these described some components of individual work. Group sizes were not consistently reported but appeared to range between 5-40 participants. Only one study reported working primarily individually with CYP [(11)].

Table 4. *Data Extraction Table Summarising Intervention Types*

#	Authors	Individual / Group	Instructors	Details of Intervention	Aim of Intervention	Framework	Frequency/Duration *(Total Hours)*
1	Boshoff et al (2015; South Africa)	Some individual and some group sessions.	"Therapy facilitator"	EAT - Interactive group ground-based exercises (e.g. participants helping each other to lead the horse through a course whilst blindfolded); guided reflective discussions led by the therapist; grooming and feeding.	Overall: To improve subject well-being and coping. Sessions: To develop a relationship with horses; building self-knowledge/empowerment through projection techniques; learning effective communication techniques and teamwork skills; conflict resolution; empathy; assertiveness; emotional awareness.	None specified	8 sessions (unknown duration/frequency) *(Unclear)*
2	Kendall & Maujean (2015; Australia)	Group	A team of mentors; an instructor; a psychologist to lead group discussions	EFP - Initial introductory session introducing basic theory, principles of 'natural horsemanship', and watching a Parelli promotional DVD. Subsequent sessions began with discussions about expectations and connections to own lives; hands-on sessions involved demonstrations of natural horsemanship followed by practice. Group discussions led by a psychologist reflecting on skills and abilities learnt, sharing positive feedback, and linking skills to everyday lives and setting aims for following week. Subsequent week started with reflections on use of skill over the last week. Final sessions involved preparation for a 10-minute video recording to be submitted to pass the Parelli Level 1 exam. "Each participant was matched to a horse based on assessments of his or her internal or external orientation" and matched to a mentor to assist with practice sessions.	Overall: To improve self-esteem, self-efficacy and social behaviour	'Horse Play' - Parelli	10 weekly sessions (unknown duration) *(Unclear)*
3	Ho et al. (2017; Singapore)	Group (of 20-40 – broken down into three	Several staff including professional instructors,	EAL - A combination of therapeutic riding (including horsemanship and learning to ride), hippotherapy, and equine-assisted psychotherapy. Horse play (individual or group goal-directed exercises with loose horses in an arena); Stable	"Each activity is designed to illustrate, train and reinforce a Habit of Mind."	EQUAL (programme designed by the school studied)	16 weekly sessions (3 hours) *(48 hours)*

		groups of approximately 6-14 for activities)	psychologists, and trained volunteers.	management (interacting with horses in enclosed stables); Riding (gymnastics and exercises mounted on a horse). During each activity and at the end of each session, staff support participants to relate tasks to "Habits of Mind".			
4	Gibbons et al. (2017; Guatemala)	Group	Not reported	EFW - Two-day workshop included PowerPoint and video presentations; question-and-answer sessions; observation of an exercise; engaging in a mock exercise with other participants; a "join-up" with a horse (where the horse is encouraged to choose a person as a leader, show signs of respect and begin to follow that person); grooming horses; leading horses around obstacles; breathing exercises; a 30-minute breathing exercise close to the horse. A short session 2-weeks later involved gathering feedback on how participants applied skills, and a role-play exercise.	Intervention designed to foster trust and leadership between horse and participant through non-violent communication. Original four-week programme designed to reduce attitudes towards violence.	Join-Up	2 "whole-day" sessions approximately 5 days apart *(Unclear)*
5	Tsantefski et al. (2017; Australia)	Group (of 5-10)	A qualified equine therapist and specialist child and family workers (qualified in psychology/social work/drug and alcohol treatment).	EAT - Weeks focused on 5 themes: Care, centeredness, connection, collaboration and celebration. Objectives and activities set for each week. Sessions began with food and a group discussion about how participants were feeling; grooming; scheduled activities (equine education, ground-based horsemanship activities increasing in difficulty). Opportunity to ride horse in final week.	To improve psychological wellbeing.	Not reported	12 weekly sessions (2 hours) *(24 hours)*
6	McNamara (2017; Australia)	Not reported.	EAGALA trained mental health professionals/ equine specialists.	EFT – (Various across sites). Verbal check-in to assess goals/current concerns. Practical tasks/challenges/activities for participant to undertake. Discussion to share understanding of participant experience, increase participants' awareness of behaviours and skills, and facilitate emotional processing. Parental involvement in some programmes. Activities were all ground-based and commonly used activities included: observing horses; grooming; walking around and touching horse; walking horse through obstacle course; directing horse to put front hooves in hoop and circle around horse	To increase self-awareness of maladaptive behavioural patterns. To increase insight through interaction with horses. Discussion to facilitate emotional processing.	EAGALA	Not reported (various across programmes/sites)

7	Wilson et al (2017; Australia)	Not reported.	EAGALA trained mental health professionals /equine specialist	EAP – Ground-based activities (not riding) requiring the participant to learn and apply "life skills"	To promote emotional learning and growth through experiential therapy with horses and use of metaphors to encourage insight. To develop transferable "life skills".	EAGALA	Not reported (various across programmes/sites)
8	Dunlop & Tsantefski (2018; Australia)	Group (of 5-10)	One EAGALA trained practitioner and staff from a drug and alcohol treatment service and other family organisations (social worker/psychologist/other).	EAT - Ground-based horsemanship activities that progressed in difficulty; education on equine behaviour; building somatic awareness and capacity for mindfulness. Sessions began with a group check in discussing how participants felt that week, followed by time grooming the horses. Activities included – observing horse behaviour; leading horses on their own; touching the horses to notice tension/relaxation; working with peers to instruct other in leading the horse; working in groups of four to build and guide others through obstacle courses; identifying sources of emotions on pictures of horses/people and discussing with staff; guiding a loose horse through an obstacle course; riding horse to celebrate ending. Children given a gift/photo at the end of the course. Pizza celebration dinner with group and caregivers where staff share children's achievements.	To improve participants' social skills and sense of self-efficacy. To provide participants with an enjoyable respite experience.	EAGALA	9 weekly sessions (2 hours) *(18 hours)*
9	Kang et al. (2018; Korea)	Group (2:3 ratio of instructors to adolescents)	Two psychiatrists, six specialists accredited by PATH Intl., two teaching assistants, two school physical education teachers.	EAAT - Week intensive programme (6am to 10pm schedules, Sunday 11am to Saturday 3pm). 2 hours per day of horse riding (including preparation and feedback) focused on different activities in each session. These included – learning to mount/dismount, learning to walk and halt, changing direction, half seat posture; trotting, sitting/posting trot. Further time throughout the day focused on feeding the horses, going to the arena, establishing close rapport, and preparing EAAT. Full timetable shown in Kang et al. (2018).	To improve attachment and increase functional connectivity within the affective network in the brain.	PATH International	Residential programme lasting 7 days *(99 hours)*
10	Burgon et al. (2018; UK)	Individual / Small groups	Qualified social worker, psychotherapists/	EAT/L – Different interventions offered all following a person-centred approach Informal environment with many animals onsite. Animal	Not reported.	Natural/ Positive Horsemanship	Not reported.

			counsellors, riding instructors, and horse handlers. All interventions followed the 'diamond model' of having 2 staff members on sessions (one with professional qualification and one experienced horse handler)	welfare prioritised – particularly freedom to choose to engage with participants. EAT sessions were offered individually and led by a psychotherapist/counsellor and horse handler EAL (including therapeutic horsemanship) sessions were typically conducted in small groups with a greater educational component. Activities reported include a body scan, mindfulness exercises, mindful breathing, grooming, feeding, observing, and leading the horses.			
11	Hemingway (2019; UK)	Individual	Highly trained instructors in Parelli Natural Horsemanship (typically 10+ years of training)	EAI - Ground-based activities involving 7 games with horses. Games included grooming, moving the horse's feet with/without touching, moving the horse backwards and forwards, asking the horse to move around in a circle, to move sideways, and to go through/under/over something. Horses are specially trained.	To develop skills in calmness, cooperation and partnership through developing clear assertive communication and controlling body language and energy	Parelli Natural Horsemanship	5 daily sessions (2 hours) *(10 hours)*

Content of EAIs

All interventions were experiential and involved CYP working directly with horses. Activities with horses could be split into two categories - non-mounted (also referred to as ground-based or 'horsemanship' activities), or mounted activities (involving being seated on the horse). Non-mounted activities included grooming, feeding, leading horses on a rope or loose, and directing horses around obstacles. Most studies described a set procedure for interventions, with some specifying a gradual increase in difficulty in tasks [8;5], and one describing flexibility in their approach to tailor the intervention to the individual [6].

In addition to interaction with horses, most interventions involved guided reflective discussions to support participants to identify skills they had used, to consider how these could be applied to everyday situations, explore participants' responses to the horses, and to consider projections or metaphors relating to the horses that could facilitate insight into participants' own difficulties.

Four interventions described interactive group activities. These included activities that required participants to work together (for example, one participant giving verbal instructions to another blindfolded participant who led a horse through an obstacle course).

The content and predicted benefits of interventions varied across studies, although there were similarities amongst interventions which followed the same framework (such as EAGALA or Parelli Natural Horsemanship).

EAGALA.

Three studies reported interventions which followed guidelines from EAGALA [6;7;8]. The EAGALA approach requires that trained mental health professionals work alongside equine specialists to support participants in working towards identified goals through interaction with

horses. Sessions are experiential, ground-based, and encourage participants to problem-solve and develop skills such as non-verbal communication (NVC) through interaction with the horse (EAGALA, 2018b). For example, children are taught to groom the horses and learn ways to instruct the horse to lift its hoof. However, the activities used in each course varied and were not reported in all studies. Some studies reported features that were not shared in all EAGALA interventions (e.g. including riding at the end of the programme and a celebratory pizza dinner with facilitators, participants, and families; [8]). Indeed, McNamara's (2017) study highlights inconsistencies across sites delivering EAGALA interventions as reported by facilitators.

Therapeutic Horsemanship.

Three studies involved interventions based on principles of 'natural' or 'therapeutic horsemanship', two of which reference the Parelli model (Parelli, n.d.; [2;10;11]). At its introductory level, this approach involves ground-based 'games' with horses that instill skills in communication, cooperation and leadership within participants, supporting them to form respectful and trusting connections and mutual communication with specially trained horses (Parelli, 2019b). The Parelli model draws upon principles of behavioural psychology and involves teaching participants to recognise and make use of their NVC, as well as increasing skills in empathy and attunement to the horses to achieve success in a series of increasingly challenging games (Parelli, 2019a; 2019b; [11]).

Other Approaches.

Two studies did not report any underlying framework. Both involved non-mounted exercises, discussions and group exercises - similar to the approaches of the EAGALA and Natural Horsemanship models [(1;5)].

One study followed the EQUAL programme which included therapeutic riding, horsemanship, hippotherapy and equine-assisted psychotherapy in a manualised programme created

for the school [3]. Students completed mounted and non-mounted activities and discussions were led encouraging them to relate experiences to five core "character-building" 'Habits of Mind' skills that the programme aimed to develop, and to consider how they could transfer these into other real-world situations.

One study was based upon the 'Join-Up' exercise and involved a shortened two-day workshop based upon a previous four-week programme aiming to improve attitudes towards violence in Guatemala. Participants engaged in educational sessions, non-mounted activities with horses, breathing exercises and guided group discussions [4].

Finally, one study involved a seven-day residential programme designed and delivered by psychiatrists alongside specialists accredited by PATH, physical education teachers, and teaching assistants [9]. The programme involved a 6am-10pm hourly timetable involving mounted and non-mounted activities including horse riding, feeding, mealtimes, free time, and establishing close rapport with horses.

Facilitators and Horses.

Facilitators across interventions varied widely in their title, background, and professional training, and characteristics were not consistently reported in all studies. Similarly, characteristics of horses were typically not reported, although stated to be specially trained in Parelli interventions [11]. One study described horses as being matched to participants or selected based on the horse's temperament and behaviour [2], whilst others described participants as being able to select horses to work with [10].

Summary of Quantitative Findings

All seven identified quantitative studies reported some statistically significant benefits for participants. Benefits are described in three main categories: reducing challenging behaviours

(including hyperactive/ 'difficult'/ aggressive behaviours - as reported by parents, facilitators and teachers), increasing adaptive skills (i.e. leadership/Likert scales; reported by all), and improving psychological wellbeing (including coping, wellbeing, self-esteem, and self-efficacy; as reported by participants). However, statistically non-significant changes were also found in some measures for five of these seven studies across the same dimensions. These included changes in emotion-regulation, attitudes towards aggression, prosocial behaviours, ability to work independently, anxious attachment levels, and ADHD symptoms.

Challenging Behaviours.

Tsantefski et al. (2017) observed reductions in total difficult behaviours, emotional problems, and hyperactivity in CYP exposed to problematic parental substance use following a twelve-week EAI, as rated by parents on the Strengths and Difficulties Questionnaire (SDQ). Statistically significant reductions were not observed in all subscales of the measure, although data trends suggested improved behaviours. *Teacher* reports indicated significant improvement in hyperactive behaviour only (reduced significance suggested to be due to a lower response rate of teachers). Neither parents nor teachers reported significant improvement on the prosocial behaviour subscale, possibly due to high baseline levels.

Kendall and Maujean (2015) reported significant improvements in social behaviour as rated by facilitators on the Social Behaviour Observation Form, following a ten-week Parelli-based EAI with adolescents who had not responded to traditional interventions.

Finally, Gibbons et al. (2017) found that a sample of at-risk Guatemalan CYP who participated in a two-day workshop showed significantly fewer aggressive behaviours on the Child Behaviour Checklist (CBCL) rated by facilitators than a wait-list control group. However, non-significant changes were observed in many areas – including in participants' self-reported prosocial

behaviour, attitudes towards aggression, reactions to interpersonal transgressions, and emotion regulation, despite CYP and their families qualitatively reporting improved emotion-regulation skills.

Adaptive Skills.

Kendall and Maujean (2015) reported significant benefits post-intervention in five out of six referrer-rated Likert scales, indicating improvement in participants' energy levels, confidence to try new things, and abilities to work with others, follow rules, and 'get work done'. No significant improvement was found in participants' ability to work on their own.

Gibbons et al. (2017) found greater leadership abilities reported by at-risk Guatemalan CYP who engaged in a two-day workshop.

Ho et al. (2017) found significant interactions between time and intervention across all participants engaged in a 16-week EAI in all measured components of "habits of mind" (thinking flexibly; taking responsible risks; managing impulsivity; listening with understanding and empathy; persistence). Measures were completed by teachers and consisted of idiosyncratic Likert scales that were used consistently within the school. Effects were observed in two separate cohorts across three time points with one outcome showing a non-significant interaction at one timepoint (managing impulsivity at 2014, semester one).

Hemingway (2019) also found significant improvement in all areas of a facilitator-rated measure following five EAI sessions assessing CYPs' realistic planning, assertiveness, communication, calmness, engagement (confidence as a learner), focus/perseverance, and taking responsibility. They also found that referrers reported improved engagement with education, problem behaviours, relationships and sense of identity for CYP, although these were not statistically analysed.

Psychological Wellbeing.

Boshoff et al. (2015) found significant improvements in self-reported wellbeing and coping (measured by the Satisfaction with Life Scale and Coping Orientations to the Problems Experienced Scale) in a group of adolescent boys with behavioural problems in their following an eight-week EAI, compared to a control group who engaged in therapeutic activities as usual within school.

Kendall and Maujean (2015) found significant improvements in self-reported self-esteem and self-efficacy following a ten-week therapeutic horsemanship programme.

Kang et al. (2018) found that a residential EAI led to improved attachment in CYP with internet gaming disorder (IGD) as measured by the Korean Experiences in Close Relationships Scale (K-ECRS), with significantly greater improvement in their IGD group compared to a control group for avoidant attachment. Insecure attachment had previously been identified as a risk factor for IGD. The authors suggested that the process of engaging in the EAI facilitated close relationships with the horses which promoted participants' interest in themselves and others. Further, Kang et al. found evidence of improved functional connectivity through MRI scans within regions of the brain associated with affect (romantic and maternal love) and reward (the amygdala, basal ganglia, temporal and medial frontal cortex). This improvement was significantly negatively correlated with scores of avoidant attachment. The findings suggested that the seven-day EAI may have enhanced 'socioaffective behaviours' in CYP with IGD and insecure attachment styles.

Additionally, Kang et al. (2018) reported a reduction in symptoms of IGD which was significantly correlated with reduced scores of avoidant attachment observed on the K-ECRS. They also identified a reduction in symptoms of depression. However, significance of these reductions was not assessed within the intervention group.

Other.

Ho et al. (2017) reported improvement in academic performance (grade point average) in at-risk groups engaged in a 16-week EAI that correlated with increased 'habits of mind' scores. Improvements exceeded those of a control group who received no intervention.

Kang et al. (2018) found increased functional connectivity in MRI scans across participants (comparing pre and post intervention) with specific improvements within parts of the brain associated with emotion regulation for the group engaging in a seven-day residential EAI.

Lasting Change.

Few of the identified studies assessed lasting effects of EAIs. Most studies collected data at pre/post-intervention timepoints only.

One study collected follow-up data two months after a five-day EAI. However, this only included referrer perspectives on changes in CYPs' engagement with education, problem behaviours, relationships, and sense of identity and was not statistically analysed [(11)].

Interestingly, in the cross-over study conducted by Ho et al. (2017), their results suggested a return to baseline levels of 'habits of mind' in participants who engaged in a 16-week EAI through their school in the first semester (compared to a second group who remained on a waiting list and completed this in the second semester). Additionally, they found increased baseline scores in measures taken at the pre-intervention time point for participants who were due to start the intervention in the second semester - interpreted as anticipatory effects. The authors suggested that scores may have related to the novelty of the activity or demoralisation in the group that were aware that they were not taking part in the intervention being offered to others.

Alternatively, Gibbons et al. (2017) found in a cross-over study that participants who completed a two-day EAI before a control group showed stability in the reduction of aggressive

behaviour (reported by mentors on the CBCL) and a sustained increase in leadership ability (self-reported) when measured again after approximately two weeks following completion of the intervention delivered to controls.

Finally, one study conducted focus groups with participants and family members two-weeks post-intervention which suggested many benefits of a two-day intervention. Benefits were also reported in two qualitative studies exploring retrospective facilitator perspectives.

Summary of Qualitative Findings

Benefits for Participants.

Four studies explored qualitative perspectives of benefits of EAIs.

In addition to their quantitative findings, Kendall and Maujean (2015) recorded words selected by CYP to reflect what they had learned each week. These highlighted an initial perception of developing skills in working with others and developing qualities such as patience and tolerance. Later, these reflected development of personal growth and stability (such as confidence, leadership, and balance).

Gibbons et al. (2017), in their mixed-methods study, thematically analysed data from focus groups of at-risk CYP and family members following a two-day workshop. They identified three central themes indicating that participants found the programme beneficial: empowerment (taking opportunities for leadership, teaching others skills, feeling greater confidence), emotion regulation (i.e. using breathing skills to increase calmness; reduced aggression and anger) and positive emotion (feeling happier, less scared and more confident). Themes from family members were similar: emotion regulation, better interpersonal interactions (better communication skills, greater compassion with others), ‘empowered leaders’ (taking on greater responsibility, sharing what they learned), and ‘learning from horses’ (noticing CYP talking about learning from the horse, and

enjoying being with the horses). The authors highlighted the possibility of ripple effects from interventions where participants and family members reported the sharing of learned knowledge and skills to other people across settings.

Dunlop and Tsantefski (2018) explored perspectives of CYP exposed to 'problematic parental substance use' (PPSU) who had completed a nine-week EAI. Two themes were identified from their descriptions; “safety and security” (discussed below) and “personal and social development”. CYP described the EAI as contributing to a sense of mastery over fears around interacting with others. CYP spoke about making friends, in some cases despite discomfort arising from behaviours of others; improvements to their own interpersonal behaviours; and overcoming fears of interacting with horses and other people.

Positive effects of EAIs for CYP with depression and/or anxiety were reported by EAGALA facilitators, including improvements primarily in confidence and self-esteem, and in assertiveness, resourcefulness, self-control, and emotion-regulation [(7)]. Facilitators reported that changes were subsequently noted by teachers and associated with improvements in behaviour, engagement in school, and relationships with others. They suggested a delay in effectiveness where participants were familiar with horses. All facilitators agreed that EAP offered beneficial changes that could occur in short periods of time but that each participant experienced unique benefits.

Design and Delivery of EAIs.

Interviews with EAGALA facilitators highlighted an awareness of variations in the interventions delivered across settings, which was suggested to be connected to a lack of a clear underlying model to guide practice [(6)]. Interviews highlighted ambivalence from facilitators about parental involvement in therapy, a lack of clarity about the role of facilitators in discussing client behaviours and drawing connections to daily life, and a variety of suggestions from facilitators

about possible mechanisms of change in EAIs. The author argued that the variance in practice and lack of a theoretical framework prevented conclusions being drawn about mechanisms of change in EAI. They identified a need for future research to focus not only on *whether* interventions are effective, but *how* they work.

Further data collected by Wilson et al. (2017) from EAGALA facilitators supporting adolescents with anxiety and/or depression also considered mechanisms of change. Facilitators highlighted the experiential nature of EAIs as integral to their effectiveness – allowing the focus to be on doing, not on difficulties, giving space for adolescents to try new things, and offering an experience that can act as a visual representation of what they learn. Horses were identified as a key part of EAIs due to their ability to reflect behaviours to participants, and form relationships with participants who may struggle to form attachments with other humans. Many therapists viewed EAIs as filling a gap in treatment provision for CYP, particularly for participants considered hard-to-reach. However, due to the lack of a robust evidence base, many reflected that EAIs were often used as a 'last resort'. Consistency in programmes was assumed but not explored by Wilson et al. (2017).

CYP perspectives were explored by Dunlop and Tsantefski (2018). CYP described horses in similar terms as ideal secure attachment figures - reporting feeling safe, understood by, and connected to the horses - and spoke more about horses than staff when describing a sense of safety. The environment and staff at the course were also described as contributing to this safety, as CYP felt staff were kind, compassionate, and they were able to be themselves and experience happiness. The authors concluded that horses had a central role in creating a safe space that allowed CYP to be 'nudged' towards positive changes, and that the attachment relationship with the horse facilitated personal development. The authors also highlighted the importance of the EAI being experienced as

fun and creating happiness - offering respite for CYP burdened with worries and responsibilities in their home live. Additionally, the importance of overcoming a challenge, leading CYP to draw on their own strengths and social support of others, strengthening participants' ability to cope with future difficulties.

Gibbons et al. (2017) considered whether emotion-regulation was a mechanism of change, a hypothesis supported by the qualitative responses of participants and their families who both independently identified emotion-regulation as a critical feature of their two-day workshop. However, the conclusions of the study were not definitive as quantitative results indicated no significant changes in measures of emotion-regulation. This was understood to be due to difficulties in understanding translated questionnaires, however, prevented conclusions from being drawn about the role of emotion-regulation in facilitating change.

Considering the growing demand for clarity around the theoretical foundations of EAIs, Burgon, Gammage, and Hebden (2018) offered a description of their EAI with reference to relevant theories and models, supported by examples taken from qualitative interviews with participants. These included: non-violent communication; a person-centered approach; object relations theory: play and dramatherapy; mindfulness; and attachment theory. The authors concluded that relationships (with both humans and animals) were a central tenet underlying all theoretical aspects within EAIs. They highlighted the importance of participants being able to see caring relationships being modelled between humans and animals, creating a secure base where participants can begin to develop relationships before engaging in other aspects of interventions (including play, metaphor, mindfulness, and activities).

Discussion

Summary

This review offers a detailed overview of the nature of EAIs conducted between 2015-2019, providing an insight into the typical characteristics of EAIs and the variation within the field. It offers a summary of recent research relating to psychological outcomes for neurotypical CYP without identified physical/intellectual impairment.

Literature Review.

The number of papers identified in this review was small in comparison to past reviews (47 papers were identified between 2009-2014 by Lentini & Knox, 2015). This reflects the narrower focus on neurotypical populations without disabilities which was selected to allow meaningful comparisons between studies and facilitate conclusions to be drawn about what EAIs can offer this population of CYP. The number of identified papers was further limited by the rigorous inclusion criteria which aimed to ensure high quality in selected research.

Summary of EAIs.

EAIs described in this study varied in terminology, methodology, and aims. Eight of the eleven studies showed some consistency in approach, involving primarily non-mounted activities, reflective discussions with facilitators, and interaction with the horse to support skill-development (including problem-solving and communication). Most of these followed guidelines such as EAGALA or Parelli. Only three studies described significantly different methodologies, involving therapeutic riding, hippotherapy, educational content, or a residential stay with an hourly timetable of varying activities [3;4;9]. However, the nature of intervention delivery varied greatly across studies.

Quantitative and Qualitative Findings.

The research highlighted a range of benefits for CYP, largely supporting the use of EAIs. Although not all findings demonstrated statistically significant improvement, trends suggested beneficial effects, and there were no reports of adverse effects for participants.

Areas of benefit included reduced challenging behaviours (including aggression and hyperactivity), increased adaptive skills (which were widely ranging, including ability to work with others, better interpersonal interactions, confidence to try new things, leadership, flexible thinking, communication, empowerment, emotion-regulation, and perseverance), and improved psychological wellbeing (including improved coping, self-esteem, self-efficacy, attachment, and positive emotion). The studies offered a wide range of perspectives on identified benefits (including participant, parent, teacher, facilitator and referrers) allowing some triangulation of reported benefits.

Evidence suggested these changes had wider effects, showing correlations with reduced symptoms of IGD, improved academic performance, and brain connectivity. Mixed evidence was found regarding lasting changes. Despite cumulative evidence supporting benefits in the three categories, due to the variance across studies, no benefits in a single domain within categories were clearly substantiated by more than one study.

Past reviews reported multiple studies showing benefits in areas of “anxiety, depression, inattention, social skills, self-esteem, emotional development/empathy and self-regulation” (Lentini & Knox, 2015, pg. 299). This review lends support to these findings, particularly in the areas of social skills, self-esteem, and self-regulation. However, conclusions that can be drawn based on the data assessed in this study are limited due to the variation in benefits that were assessed across studies and lack of cumulative evidence.

This review further adds to EAI literature in its summary of research into mechanisms of change, contributing to an emerging topic in the field. Studies suggested possible factors affecting change, including activities being experiential and fun, the development of emotion-regulation skills, and the role of horses in mirroring behaviours and forming attachments with participants. However, it was difficult to synthesise findings which were highly variable, suggested to reflect the lack of a unified theory underlying EAIs

Quality of Research

It is important to consider the findings of this review in light of the quality of the studies (assessments summarised in Table 3). Quality was variable, with several issues arising across studies, discussed here in greater detail.

Sample and Design.

Sample Size.

Five of seven quantitative studies were limited by small sample sizes, and only one qualitative study included over 10 participants, suggesting that samples were not necessarily generalisable to the wider population.

Inadequate Control Groups.

It was not possible to confirm that reported effects were due to EAIs as no studies involved active control groups (where participants engaged in an alternative intervention such as music or drama therapy, offering a more similar experience to participants engaging in an EAI). Without active control groups, changes could be attributed to other factors, for example, benefits could result from spending time engaging in a fun activity with peers outside of school premises.

Most control groups consisted of ‘treatment as usual’ (with no intervention or as part of a wait-list crossover design), and one was made up of ‘healthy controls’. However, further issues

were identified in these designs. For example, Ho et al. (2017) compared EAI groups to a control group either receiving no intervention, or a delayed intervention. As participants were aware of others engaging in an EAI, the authors highlighted that control groups likely felt they were missing out, potentially leading to worse outcomes in that group and heightening effects observed in the EAI group. Kang et al. (2018) compared reductions in symptoms of IGD and depression to a healthy control group experiencing the same EAI but could not draw conclusions about effectiveness due to the unequal baseline levels of symptoms between the two groups.

In the two studies with no control groups, it was possible that benefits may reflect changes associated with the passage of time, i.e. age/maturation or changes in home/school life stressors or external support.

Quasi-Experimental Designs.

Two studies used quasi-experimental methods where allocation to conditions was not randomised and instead due to presence of selected difficulties or referral to the EAI. This design prevented matching between groups at baseline to ensure that groups were similar and therefore comparable to identify effects of the intervention.

Self-Selecting Samples.

All studies could be argued to be affected by participant self-selection as participants were able to decline or withdraw from the research. It must, therefore, be considered that participants who chose to engage and completed EAIs may possess characteristics not applicable to all. For example, participants are more likely to have background preferences for horses; lack phobias or allergies to animals; and may be primed to feel positively about the EAI if they are then allocated to the condition to receive their treatment of choice. Participants who dropped out of research may have been exposed to unidentified confounding variables which reduced success rates. For

example, having greater fear of horses or experiencing greater challenges in their personal/family lives making them unable to continue. However, this data was typically not collected and so cannot be accounted for.

Confounding Variables.

The varied nature of EAIs made it difficult to distinguish whether benefits resulted from typical features of EAIs, or from idiosyncratic, confounding aspects of individual interventions. For example, whilst Kang et al.'s (2018) residential programme was described as an EAI, participants followed strict full-day schedules, significantly varying from typical EAIs and likely significantly impacting on the study outcomes.

Other differences across studies included the presence of trained mental health professionals, and the total hours of EAIs. Past research has suggested 'dose effects', where greater effects were observed in some of the studies offering the longest interventions [2]. This was not apparent in this review; however, no formal analyses were undertaken.

Finally, differences amongst populations of CYP may also influence effectiveness. Tsantefski et al. (2017) noted that CYP in their intervention came from relative poverty and the experience of attending an EAI was likely to be a recreational activity they would not have typically engaged in, offering a positive experience in itself. Further, the EAI offered an unusual opportunity to socialise with other CYP from similar backgrounds, potentially heightening beneficial effects for this population.

Outcome Measurement.

Standardised Measures.

Previous reviews in the field have highlighted that many EAI studies used broad or non-standardised measures which either did not appear to correspond to the hypothesised benefits of the

interventions or did not have evidence of validation [2]. This issue had improved in studies included in this review. Five out of seven quantitative studies included use of standardised outcome measures (one with additional idiosyncratic measures [2]), with only two using solely idiosyncratic measures that lacked any demonstrated psychometric properties [3;11]. Of studies that did use standardised questionnaires, most outcome measures were focused to the area of interest (i.e. wellbeing and coping[1]) with only one study involving the use of over three questionnaires, suggesting a broader focus in exploring benefits [4]. These findings suggest a change towards the use of standardised outcome measures with greater demonstrated psychometric properties which may be more easily replicated and compared across studies.

Differing Perspectives.

In this review, three studies assessed only participant perspectives on changes [1,8,9], five studies assessed facilitator, teacher, and/or referrer perspectives [3,5,6,7,11], and three studies included a combination of both participant and parent/facilitator/teacher/referrer perspectives [2,4;10].

Outcome measures completed by facilitators or other staff risked greater levels of bias as professionals were not blind to participants' treatment conditions and may have been invested in promoting the positive outcomes of their work. Similarly, ratings by teachers, parents and referrers risked bias due to demand characteristics, a lack of blinding, and a reflection of desires for positive outcomes of treatment. Although efforts were made in some studies to ensure consistency in scoring [3] it is possible that ratings were still subject to bias, particularly given the lack of blinding across studies.

Questions around validity have been raised where others are reporting on internal states of CYP which are not observable and are subject to interpretation of the respondent (e.g. SDQ questions for emotional problems such as 'often unhappy, depressed or tearful' – completed by

parents/teachers [5]). Past research has highlighted discrepancies between parent and self-reported symptoms (Creemens, Eiser & Blades, 2006; Phares, Compas & Howell, 1989). Similarly, studies focusing solely on the perspectives of facilitators offer a limited perspective of the effects and delivery of EAIs and do not necessarily reflect the experiences of CYP completing the interventions (e.g. [6;7]). On the other hand, questions can be raised about the level of insight that CYP are able to provide when reflecting on their own experiences, particularly at younger ages (Edelbrock, Costello, Dulcan, Kalas & Conover, 1985). Consequently, it can be argued that, considering the limitations of relying on either solely participant or non-participant report, greatest validity can be gained from triangulating outcomes through collecting responses from a range of sources. This approach was taken in three studies in this review.

Generalisability.

The findings of this review can be connected to wider issues in the field, discussed below. However, the generalisability of included studies was limited by issues of lack of clarity and analysis in some of the collected data.

Samples.

Wider research has suggested that EAIs may vary in effectiveness with participant age, potentially being more useful for younger participants (Schultz et al., 2007). This review evaluated a broad age range (7-23; mean ages below 19), suggesting that EAIs can be beneficial at all ages throughout this spectrum. However, none of the identified studies compared effects by participant age.

Cross-cultural validity in EAIs is also an area of development in the field, with Signal, Taylor, Botros, Prentice, and Lazarus (2013) highlighting a lack of evidence supporting this, and the likelihood that participants from differing cultures will experience EAIs differently. However, few

of the included studies considered cultural differences, with nine not reporting participant ethnicities.

Research has suggested that effects of EAIs may be at least partially due to 'novelty effects' of the intervention, as the experience of completing activities with a horse is typically new and unusual to participants (Anestis, Anestis, Zawilinski, Hopkins & Lilienfeld, 2014). This concern was repeated across several studies in this review and currently it is unclear whether EAIs would be as effective on repetition. There was no indication given in the identified papers as to whether participants had previously engaged in EAIs, limiting any further insight into this concern.

A further challenge in this field is the variation and lack of clarity around the populations participating in EAIs. This may reflect the nature of 'at-risk' or 'hard-to-reach' CYP populations who may be referred to interventions due to concerns with behavioural, social, or emotional difficulties, without any formal diagnoses or labels given to them. Whilst this may reflect good practice in CYP whose difficulties are likely to change over time (Price-Robertson, 2018), it adds a greater challenge in drawing comparisons between populations across studies. Additionally, terms such as 'at-risk' or 'hard to reach' lack clear definitions and researchers and clinicians should be cautious in assuming generalisability to similarly classified samples. For example, Ho et al. (2017) identified participants as "at risk" due to their attendance at a "pre-vocational" school, however, could not provide detailed demographic data about participants' intellectual/clinical disorders. In this review, there is not enough research to draw conclusions about particular populations.

Methodology.

Variations in practice across EAIs have been repeatedly attributed to the lack of a clear, unified theory underpinning practice (particularly within McNamara, 2017). Although attempts have been made to connect theory and EAI practice (notably within Burgon et al., 2018), theories

that have been identified vary between studies and do not offer a clear basis for their selection. For example, Burgon et al. (2018) offer excerpts from qualitative interviews to support the theories described in connection to their research. However, the process by which theories were selected or interview data was analysed was not clearly stated, suggesting these had been subjectively decided upon. This connects to a wider issue where, despite attempts of particular models to systematise practice (such as through the EAGALA framework), clinicians are still reported to be delivering differing interventions. McNamara (2017) suggested this may be attributed to the lack of an integrated underlying theory and explicit theory-practice links.

Research Implications

To further research into mechanisms of change with EAIs, it may be helpful to develop an EAI-specific theory of change before testing this further through quantitative research. Future research could use grounded theory methodology to develop a theory of change grounded in the perspectives of participants and non-participants involved in EAIs to triangulate and improve validity of findings. The field would benefit from the development of a unified theory offering clear theory-practice links and guidance for practitioners.

Further, results of future studies could be compared across different types of EAIs to explore consistencies and variance across studies with differing methodologies, to support identification of key elements of interventions contributing to change.

To consider whether EAIs offer a valuable addition to practice or NICE guidelines, it is crucial to continue to develop the evidence base. Future research should attempt to replicate identified benefits with larger samples and use active control groups. The use of active control groups would allow comparison of effectiveness of EAIs with other interventions, increasing the validity of conclusions suggesting a role of EAIs in contributing to change. Future research needs to

ensure clarity in descriptions of interventions, participants, and methodologies (including specifying participant age, ethnicity, difficulties, and previous EAI experience). This will facilitate generalisability of findings and contribute to the development of a broader evidence base. Research could also explore lasting effects of EAIs which would require data to be collected at follow-up time points. Finally, studies should continue to use validated measures with demonstrated psychometric properties. Where possible, studies should strengthen findings by triangulating outcomes through multiple sources.

Clinical Implications

The findings of this review offer preliminary support for the use of EAIs for CYP. Positive effects of EAIs were reported in all studies across a wide range of areas, including challenging behaviour, adaptive skills, and psychological wellbeing, as described above. No adverse effects were reported. Although evidence in the field is still emerging and should be considered in light of the limitations discussed in this review, initial evidence is promising and highlights the potential of EAIs as an alternative, beneficial treatment option, particularly for CYP who struggle to engage in talking therapies.

Although further, high-quality evidence is needed to recommend clinical use of EAIs, this review suggests EAIs may offer a valuable addition to typical talking therapies. Findings suggest EAIs offer a range of benefits and a novel approach to engaging CYP. The findings of this review suggest that even short, intensive interventions can be beneficial. Further, as most EAIs in the UK are charity-led, these reduce pressure on NHS services.

This review identifies increasing evidence supporting EAIs for ‘hard to reach’ or ‘at risk’ populations where CYP may have experienced adverse or traumatic childhood events. However, there is insufficient evidence to suggest benefits for particular diagnoses. EAIs are suggested to be

more likely to be effective where: participants have an interest or opt-in to EAIs; participants are supported to engage; the EAI is a new or unusual activity; or the EAI offers social interaction with peers, or respite from the challenges of daily life.

Limitations

The findings of this review should be interpreted considering the following limitations. Firstly, that due to the wide diversity of the methodologies of reported studies, the generalisability of effects across EAIs cannot be assumed - reported benefits may not be true of all types of EAIs. Particularly whilst mechanisms of change within EAI lack clarity and supporting research, it is difficult to identify specific aspects of interventions that may facilitate beneficial effects. Secondly, the findings should be considered alongside the discussed issues in quality. Although research is promising, these issues limit confidence that it is EAIs and not other confounding variables that contribute to the observed benefits, and that similar findings would be found across wider or more diverse samples. Finally, it is possible that, despite the efforts of the researcher, some relevant studies may not have been included in this review due to the variation in terminology within this field.

Conclusion

This review offers a detailed summary of recent research exploring psychological effects of EAIs for neurotypical CYP without intellectual or physical disabilities. The nature of eleven EAIs are described, highlighting areas of consistency and difference in practice. Outcomes are explored and offer evidence of numerous benefits of EAIs, including reduced challenging behaviours, increased adaptive skills, and improved psychological wellbeing. The design and delivery of EAIs

is considered in relation to identifying mechanisms of change in EAIs, offering an overview of features that have been suggested to influence outcomes.

The breadth of scope of recent research, which varies widely in participants, interventions, and research methodologies, mirrors the findings of past reviews. This review also similarly highlights ongoing issues in the field, particularly in quality of research methodologies; and limited conclusive evidence due to the diversity in interventions and research approaches. However, the findings suggest some areas of development in the field, particularly the increased use of standardised outcome measures.

At this time, although findings are promising and suggest benefits particularly for CYP who struggle to engage in talking therapies, conclusions that can be drawn about the effectiveness of EAIs are still limited as there is little robust support for any single benefit. Further research is recommended to establish the evidence base for EAIs for this population of CYP.

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Section B: Empirical Paper

"TAKING CARE OF A HORSE CHANGED MY LIFE": DEVELOPING A GROUNDED THEORY OF CHANGE IN AN EQUINE-ASSISTED INTERVENTION FOR YOUNG PEOPLE

Chosen Journal: Journal of Child Psychology and Psychiatry

Word Count: 8000 (174)

Abstract

Background: Equine assisted interventions (EAIs) offer an alternative therapeutic approach for children and young people (CYP), particularly those disengaging with talking therapies. Research indicates encouraging emerging evidence supporting EAI use. However, evidence is limited by a lack of standardisation, attributed to the absence of an underlying theory. As such, mechanisms and processes of change are unclear in EAIs. This study aimed to develop a theory of change in an EAI.

Method: Thirteen interviews were completed, including seven CYP who had completed a five-day EAI, two parents, two referrers, and two facilitators. Interviews were analysed using grounded theory methodology.

Results: A theory highlighted key components suggested to affect change in an EAI. These included: the participant, the intervention (including three key processes), a safe and empowering environment, the changes, and external support. Findings suggested interactions between these components and suggested beneficial effects of the EAI, categorised as feeling more able and hopeful.

Conclusion: The proposed theory offers an interpretation of a synthesis of perspectives exploring change in an EAI. The theory showed similarities with components identified in wider research and other psychological theories. Limitations and implications for practice and future research are discussed.

Keywords: Equine-Assisted Intervention; Change; Grounded Theory; Young People; Horse

Introduction

Psychological Difficulties in Children and Young People

Children and young people (CYP) in the UK are reported to be experiencing increasing levels of psychological difficulties, with an estimated one in eight CYP having at least one mental health disorder in 2017, a figure that has been rising since 1999 (NHS Digital, 2018). A recent analysis has shown that the rate of referrals to Child and Adolescent Mental Health Services has increased over the last seven years, with services struggling to meet the demand (NHS Benchmarking Network, 2019).

Although the validity and helpfulness of mental health diagnoses in CYP can be questioned (Price-Robertson, 2018), this data clearly indicates greater levels of reported psychological distress and increased levels of help-seeking for psychological support in today's CYP.

Guidance for supporting CYP with psychological difficulties such as depression or anxiety typically recommends talk-based therapies based on a review of evidence (the National Institute for Health and Care Excellence, 2013; 2019). However, these treatments are not suitable for all, and the alternative therapies such as equine-assisted interventions (EAIs) offer a different approach to supporting CYP. EAIs have been suggested to support engagement of many CYP who are perceived as 'hard-to-reach' (Fine, 2015; Frewin & Gardiner, 2005).

Evidence for EAIs

The term EAI is used in this review to capture all therapeutic interventions involving horses which aim to support CYP to improve their psychological health. Terminology across the field is not standardised, with similar interventions described using terms including equine-facilitated therapy, equine-assisted psychotherapy, and equine-assisted activities (an overview is given by Fry, 2013). Although there is currently no overarching regulatory body of EAIs, several organisations

have developed guidelines, certifications and frameworks in attempt to standardise practice in what can be a very diverse field (such as PATH, 2019; an overview is given by Brandt, 2013).

Recent reviews of literature in the field offer preliminary support for the use of EAIs with CYP, suggesting positive effects in a range of areas including "anxiety, depression, inattention, social skills, self-esteem, emotional development/empathy, and self-regulation" (Lentini & Knox, 2015, p. 299). Further specific evidence supporting the use of EAIs exists for CYP with autism spectrum disorder (McDaniel Peters & Wood, 2017). EAIs have increased in popularity, yet development has been limited by the quality of research and a lack of standardisation in the field. This has limited meaningful comparisons across studies and conclusions that can be drawn regarding effectiveness of EAIs (Bachi, 2012; Lentini & Knox, 2015).

Understanding Change in EAIs

The variation in EAI methodologies has been connected to the lack of a unifying underlying theory to explain how EAIs can effect change (McNamara, 2017). A theory of change in EAIs could offer greater understanding of how change occurs, what changes are likely to occur, and guide practitioners in delivering effective interventions. Researchers have begun exploring change processes, investigating not only *if* EAIs lead to positive changes for CYP, but *how* these changes occur (e.g. Burgon, Gammage & Hebden, 2018; Dunlop & Tsantefski, 2018).

Research into Change.

In psychotherapeutic practice for CYP, research has typically explored whether a defined aspect of change has occurred, with the process and mechanisms by which this change has occurred being less studied (Johannson & Hoglend, 2007; Kazdin & Nock, 2003). Without understanding the mechanisms by which change occurs, it can be argued that therapies are limited in their usefulness as clinicians are unable tailor treatments to ensure effective treatments are delivered, enabling

change to occur (Kazdin & Nock, 2003; Llewelyn & Hardy, 2001). The identification of mechanisms of change can be facilitated using various research methodologies, however, it has been recommended that the direction of any such research should be based upon an outlined theory (Kazdin & Nock, 2003).

In general, psychotherapeutic practice, literature reviews have identified possible key mechanisms of change. These include, "the importance of [therapeutic] alliance, client factors, and extra-therapeutic events" (Kenny, 2015, pg. 31), participant motivation, creating an environment conducive to change, therapist interpretations, and participant self-exploration and insight (Elliot, 1989; Ryan & Deci, 2008).

Within EAIs for CYP, research exploring potential mechanisms of change is still emerging. Suggested mechanisms include the development of emotion-regulation skills, the experience of safety and security, and the experiential nature of EAIs (Dunlop & Tsantefski, 2018; Gibbons et al. 2017; Wilson et al, 2017). However, there have been few studies connecting mechanisms of change to underlying theories, without which it is difficult to synthesise these findings or explain how change may occur in EAIs.

Supporting Theories.

In the wider field of animal-assisted interventions, several theories have been posited to explain how animals can have a beneficial effect on humans who interact with them. Freud suggested that interacting with animals supported people to recognise and learn to manage their own animalistic drives (Freud, 1959; Serpell, 2010). Other theories have suggested that forming relationships with animals is an evolutionary predisposition offering a range of advantages, including providing a source of comfort and support, and reducing stress levels (Fine and Beck, 2015; Halm, 2008; Wilson, 1984). Others suggest that, in line with attachment theory, contact with

animals fulfils a primary need for many who find animals easier to form attachments to than people (Kruger & Serpell, 2006).

Within the field of EAIs, several researchers have made connections between EAIs and existing psychological theories. These include suggesting roles of attachment theory, cognitive-behavioural theory, object-relations theory, identity theory, and systems theory (Burgon, Gammage & Hebden, 2018; Wanneberg, 2014; Watson, 2019). Currently, no unified EAI-specific theory exists that suggests *how* change occurs in EAIs or indicates what features of EAIs mediate change for neurotypical CYP without physical or intellectual disabilities (Wilkie, Germain & Theule, 2016; McNamara, 2017).

The EAI

The current study was based at a UK EAI service based on Parelli Natural Horsemanship (Parelli & Parelli, 2012) supporting CYP with various psychological, social, emotional, or behavioural difficulties. The service reported positive outcomes including reduced problematic behaviours, positive changes in identity (including self-esteem and confidence), improved engagement with education or training, and improved relationships (Hemingway, 2019).

The current intervention offered at the service is described by Hemingway (2019). In preliminary research exploring mechanisms of change, Hemingway, Carter, Callaway, Kavanagh and Ellis (2019) suggested that changes may be facilitated by participants experiencing high emotional arousal whilst completing activities with the horse followed by experiences of positive outcomes.

The preliminary nature of the evidence exploring change mechanisms indicates a need for further evidence to support these findings. The existing research also highlights a need for the

development of a theory specific to EAIs to support the synthesis of research, development of an evidence base, and guide further explorations into change.

Aims

This study aimed to contribute to the literature by developing a grounded theory of change in an EAI based upon qualitative interviews with people involved with an EAI.

For the purpose of this study, change was defined broadly as any perceived difference in an individual's internal or external functioning (i.e. in their thoughts and feelings, or in their observable behaviours) to allow for variation in participant perceptions.

This study aimed to answer the following questions, shaped throughout the research as part of an iterative process, in line with grounded theory methodology.

- Was the EAI understood to have contributed to changes in CYP?
- *What* changes was the EAI associated with?
- *How* was change was understood to be facilitated by the EAI – and whether any particular features were perceived as contributing positively or negatively to change occurring.

Method

Design

This study followed Glaserian grounded theory methodology (GTM); selected to develop a theoretical understanding of the process of change in EAIs, grounded in qualitative interview data from people involved with an EAI (Glaser, 1978; Urquhart, 2013). The analysis was undertaken within an interpretivist epistemological paradigm that acknowledged the researcher role in analysis (Urquhart, 2013).

Interviews were person-centered to support participants to feel comfortable to engage in the interview and share their experiences (Rogers, 1959). Interview questions followed a semi-structured template developed with input from the research supervisor and staff at a service delivering EAIs in the UK, and subsequently amended in line with the emerging theory (Appendix F).

Participants

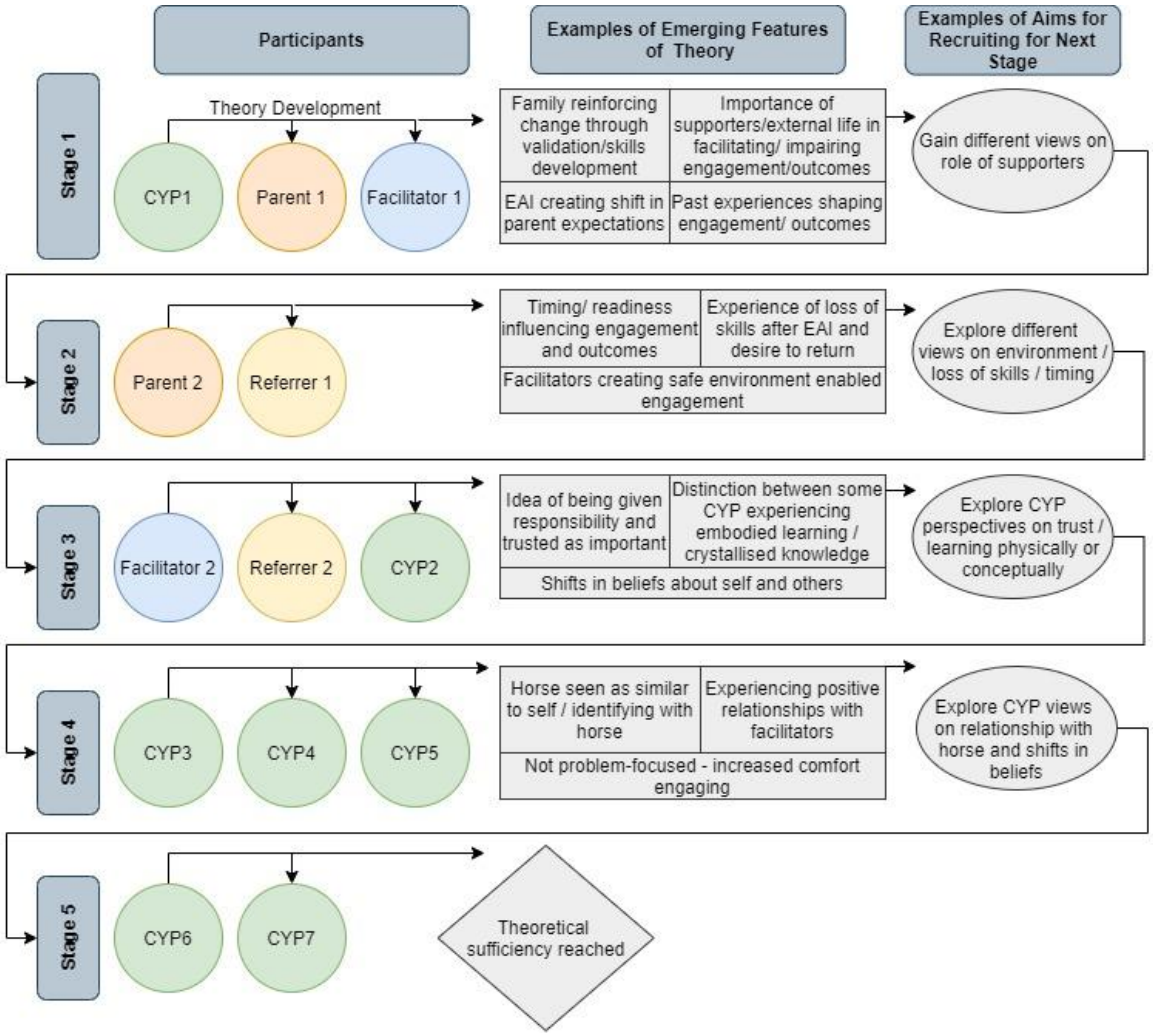
Participants included 13 people with direct experience of either engaging in or supporting a CYP to engage in an EAI at a service in the UK, who met inclusion criteria (Table 5). Participants included seven adolescents aged between 14-17 years-old, two parents of EAI-participants (one who was also interviewed), two facilitators, and two referrers. All participants were female. Eight participants identified as White; data was unavailable for five others.

This range of participant types (CYP, parent, facilitator, and referrer) were recruited to facilitate theory development, to allow for the possibility that CYP may decline or have difficulty engaging in hour-long interviews, and to increase validity of the emerging theory through triangulation from multiple perspectives. Participants (of varying types) were recruited at different stages based on theoretical sampling. Figure 5 shows a summary of the types of participants recruited at each stage, the path of theory development, and examples of how emerging theories shaped subsequent sampling. Participants were offered reimbursement for travel costs (up to £10).

Table 5. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
• All participants had completed *or* supported CYP (aged 14-18) to complete an EAI at a service in the UK • All participants could speak fluent English • All participants had given their consent to be contacted for research purposes	• Participants experiencing acute illness at the time of the research interview • Participants who had a learning disability • Participants who were unable to communicate verbally or engage in the interview process

Figure 5. Flowchart summarising process of theoretical sampling.



Procedure

Participants who met inclusion criteria (Table 5) were identified by staff at the EAI service. Staff advised that selection was also influenced by their perception of people's likely cooperation, based on their previous engagement. This sampling strategy was used to facilitate participant engagement in the time-frame available. Potential participants were selected in line with theoretical sampling (Urquhart, 2013), given copies of the study information sheet and consent form (Appendices D & E) by the researcher or staff at least 24 hours prior to interviews. Participants

were given opportunities to ask questions about the research before being offered an interview date. Inclusion was subject to participant consent (gained at interview), and written consent of parents/guardians where participants were under 16-years-old.

Interviews lasted between 30-75 minutes and were recorded to a Dictaphone. Eight interviews were held face-to-face at the service headquarters, and five were held over the phone. One CYP chose to have a parent present throughout the interview; all other participants were interviewed alone. Staff members were available to offer support if needed. The limits of confidentiality were highlighted to all participants. No support or breaches of confidentiality were required throughout the study.

To address power imbalances in interviews and reduce possible demand characteristics, participants were advised of the researchers' independence from the service and the anonymity of their responses.

All data was kept secure, private, and was anonymised upon transcription. Where consent was obtained, audio recordings were transcribed by a third party who signed a transcription agreement (Appendix G).

Ethical Approval.

This study received ethical approval from a panel at Canterbury Christ Church University in January 2017 (Appendix C).

Data Analysis.

Interview data was analysed using Glaserian GTM and NVivo 11 software (version 11.3.0.773; QSR International, 2016; Glaser, 1978; Urquhart, 2013). Glaserian GTM involved the development of theory through three stages of coding.

- ***Open coding.*** Interview transcripts were coded line-by-line with descriptive labels (Appendix H).
- ***Selective Coding.*** Codes were connected into categories relevant to the research question. These were developed through constant comparison between newly emerging and previously categorised data and amended as needed.
- ***Theoretical coding.*** Categories were compared and integrated into theories outlining connections between categories.

Additionally, specific GTM techniques included theoretical sensitivity (continually developing interpretations based on emerging data); developing a theory solely on available data and comparing to past research *after* theory development; using theoretical memos to document possible relationships between codes and categories; and theoretical sampling (recruitment of further participants determined by theory development; Urquhart, 2013; Glaser & Strauss, 1967).

Theory development concluded when the researcher identified theoretical sufficiency (where data offered sufficient detail from which to build a theory; Dey, 1999). Theoretical sufficiency has been argued to be a more appropriate method for GTM than theoretical saturation which requires the emergence of no new concepts and suggests a distinct end-point to relevant data that can be gathered (Saunders et al., 2018; Dey, 1999). Due to the variation in subjective experiences of the EAI and the interpretivist orientation of this research, sufficiency was determined to be an appropriate endpoint.

Quality Assurance.

Quality in this study was assessed using the SURE Qualitative Studies Critical Appraisal Checklist (Appendix B) and guidance from Yardley (2000; 2017).

The preconceptions, motivations and perceived influence of the researcher were reflected upon through a reflective research diary (Appendix L) and a bracketing interview completed prior to data collection (Tufford & Newman, 2010; summarised in Appendix M).

To reduce bias in coding and interpretation, the research supervisor reviewed and coded several transcripts. Emerging themes were discussed, and the final theory was co-created. Memos and maps recorded throughout coding offer transparency in the process of category and theory development (Appendices I;J;K).

Results

This study set out to develop a theory of change in an EAI, grounded in the views of participants, parents, referrers and course facilitators involved in the intervention.

Table 6 summarises identified categories and sub-categories.

Table 6. *Categories and Sub-Categories within the Theory of Change*

Categories	Sub-Categories
1. The Participant	1.1 Hesitation 1.2 Motivation 1.3 It Can Work for Anyone, But Not Everyone
2. The Intervention	2.1 Overcoming a Challenge 2.2 Partnership with The Horse 2.3 Recognition and Crystallisation of Achievement
3. Safe and Empowering Environment	3.1 Safe 3.2 Empowering
4. Changes	4.1 Feeling Able 4.2 Feeling Hopeful 4.3 Loss
5. External Support	5.1 Facilitating 5.2 Impairing

Core Category

The data suggested a core category which was "how different components of an EAI can facilitate CYP to feel more able and hopeful". All other categories are described in relation to this core category and further detail the suggested key components, their relationship to change, and the changes that participants experienced resulting from the EAI.

Category 1. The Participant

Each participant entered the EAI with a unique set of experiences and expectations that influenced their engagement and formed an individual baseline from which change could occur. These individual differences were categorised as either causing 'hesitation' or 'motivation'.

Hesitation.

For many participants, factors contributing to hesitation included uncertainty about the novelty of the course, what it would involve, and how it would benefit them. *"I had no idea what I was expecting. I just knew I was coming and seeing horses. That's literally it."* (CYP7). This uncertainty was often combined with anxiety about starting the course. *"I think she was just nervous because she's never been involved with horses before. It was something that was out of her comfort zone"* (Parent [P] 2).

Many participants had difficult past experiences, including experiences of others as unsafe or unhelpful, and of themselves as struggling to manage difficulties including communication, anger and mental health problems. *"My anxiety was so bad; I was getting bullied and it was horrible. I was just going through such a rough patch"* (CYP7). Naturally, for some, these experiences contributed to negative expectations of the EAI. "*Most of them would have not particularly positive experience of talking therapies. And adolescents just don't want to go there*." (Referrer [R] 1). "*I don't really like talking about my feelings, I thought this is going to be the*

same" (CYP5). *"I just thought I'm going to get there and I'm not going to like it."* (CYP3). *"I just thought I wasn't going to be able to do it"* (CYP3).

In combination, these 'hesitation' factors led some participants to want to disengage with the EAI. *"I went, it doesn't seem like it would work or anything. I just didn't understand how it would work and I wasn't really bothered about giving it a go"* (CYP7).

Motivation.

Most participants described some motivation about the EAI, that co-occurred with their hesitation. Motivation included hopes about enjoying and benefitting from the course – *"I was like, 'It will be fun…'"* (CYP6), *"I was getting really excited for it because I thought it would help my confidence"* (CYP1). Motivation was also influenced by past positive experiences and attitudes towards animals - "*I felt a bit excited because I like being around horses*" (CYP4).

It Can Work for Anyone, But Not Everyone.

Several interviewees suggested that 'timing does not matter' as participants could engage successfully and experience positive changes regardless of their hesitation or motivation levels. *"Most programs exclude people who are declaring themselves not to be eager to make a change. … we do the exact opposite. We say, 'bring us your disengaged ones who don't want to be here, we will convince them in session 1 to keep coming'. And we're really successful"* (Facilitator [F] 2). "*I feel like there's never a wrong time … I feel like whatever you are going through, this is perfect for you. It helps people, all different people*." (CYP7).

However, this view was not shared by all. Others reported that timing could be important, suggesting that although the EAI *can* work for *anyone*, it does not necessarily work for *everyone,* and that some motivation may be needed for change to occur. "*Occasionally you do get ones that are just really not… the horses don't pique their interest at all and they just don't see the point in*

being here, so that's really tricky" (F1), "S*ome of the people that we refer there, it might have… maybe not been the right thing for them at that time*" (R2).

Category 2. The Intervention

Features of the intervention were categorised into three key components that were suggested to be essential to the development of change.

Overcoming a Challenge.

All interviewees identified the participant's experience of 'overcoming a challenge' as contributing to change. This consisted of participants experiencing tasks within the EAI as difficult, causing anxiety at first, but ultimately being achievable. "*[The activity] was difficult but we managed it*" (CYP6). *"I don't think it would have made much of a difference if I didn't put myself out of my comfort zone … If this was easy, I probably wouldn't have learnt much from it. But it wasn't so hard that it made me freak out and not want to come again*." (CYP7).

To achieve success, participants were required to develop and practice new skills, including planning, patience, focus, shifting to a positive mindset, increasing body awareness, and regulating emotions and body language. "*I had to think about what I was gonna do*" (CYP2). "*I relaxed and I would show myself I could relax*" (CYP7). "*If people experience a level of high anxiety, we teach them to use what we call "neutral" which is a really big part of the course which is where they have to get their body and their mind into a relaxation*" (F1).

Through frequent repetition, participants described a sense of challenges becoming easier, and becoming independent in knowing when and how to use different skills. "*It was really hard. But the more I did it, the easier it was."* (CYP1). "*I got to the point where I just enjoyed it. There were things that I was nervous about, but it wasn't too bad. And I think even when something does*

happen… Because I had a breaking point during one of the sessions, I just couldn't process everything, but I just went into neutral and stopped" (CYP4).

Partnership with The Horse.

A second key aspect to the intervention was participants' interaction with the horse. The horse was reported to support participants' skill development through mirroring behaviours and emotional states. This mirroring enabled participants to learn about their own physical and emotional states, increasing self-awareness and reinforcing correct skill use. "*I never really noticed how tense I was until I was put with the horses and then when I was tense, they would be tense, when I was relaxed they were… I learnt to see it on myself as well as seeing it on them"* (CYP7). Additionally, some participants gained insight into their own needs and behaviours through identification with the horse. "*Texas was a catastrophic thinker so he's quite like me. When Texas went over the noodles it was like when I started coming here the first day. I was scared, but then I still did it, so I was like, 'We're the same!'* (CYP6)

Interviewees described the qualities of the horse as essential to enabling this feedback process. The horse was seen as a supportive partner, similar to a human, attentive, non-judgmental, who liked them, whom they could care for, and with whom they formed a strong relationship. "*They see the feedback that the horse gives them, that isn't always positive, but they can accept that feedback because they know it's completely non-judgmental from the horse."* (F1). *"[It's] like the horse itself is trying to help you."* (CYP1). *"I love the horses"* (CYP4). *"There's something you can't quite put into words. It's almost like there's an umbilical cord between [them]. It feels electric. So, I hate using the word magical, but there is something magical about it!"* (F2).

These qualities of the horse supported participants to engage with the process, and to feel safe and empowered, directly facilitating changes. *"Because they were like listening to me and*

understanding, and they did what you said they had to do – it felt like I could tell it anything. It just built… I don't know how but it felt like it built my confidence up a bit. Because they were listening to me, and doing what they were told to do" (CYP1) / *"I don't think [my daughter] would have been able to have connected with the type of therapy it was without the horse being there. I really think that the horse was a massive integral part of the therapy."* (P2).

Recognition and Crystallisation of Achievement.

The third key process in the intervention was participants' experience of their achievement being recognised and crystallised. All interviewees identified the importance of participants achieving success, feeling good about their achievements, and success and changes being recognised and validated. Positive feedback was given throughout the EAI and participants were given items to mark their achievement at the end (such as a certificate, video, and a star chart). These items could act as reminders of their success, or souvenirs to share with others. "*You could tell that she was chuffed to bits with what she'd accomplished*" (P2). "*They are really, really proud. If I go back in the home, quite often [the star chart] is stuck up somewhere - like a badge of honour - you know, I've done this, I've actually been recognised for something that I've done, I've achieved something"* (R1). "*I didn't want to keep it to myself. I was proud of myself*" (CYP7).

Participants were supported to make sense of (crystallise) their experiences and achievements and draw connections to their lives outside of the EAI. Some participants were able to articulate how they were able to apply what they had learnt. "*I was really stressed in Year 10 and I was doing so much work trying to be in school that suddenly I just broke down and I couldn't do it anymore, but once I got back into Year 11 I did things quite slowly and got back into the routine of things, and that's what you do here really. We have to get the horse to walk sideways, walk*

backwards, and they're nervous about that too, so you do it slowly and step by step and you say, 'Well done.' … I still apply that to my life now" (CYP7).

Others held a sense of the EAI as a magical process that was less understood; often describing a more physical, embodied sense of change. "*I don't know. I can't explain it. I just… I felt like it helped"* (CYP2) *"I still don't quite understand myself how… it works, to be honest … I just sit here and I'm thinking 'my god, it's magic!' [laughs]"* (P1). "*Some of the things that I learned; I didn't actually think about learning. I thought about - this is nice, I feel relaxed and calm, this is good."* (CYP4).

Facilitators did not view crystallisation as necessary for changes to occur or to be transferred outside of the course. *"We don't try to explain to them what's happening. We just try and get those changes … So long as they've got it, and they can utilise those skills in their day to day life… it's like learning to swim, you don't need to be able to explain the technicalities of swimming or to be able to teach someone else to swim, or to be able to write an essay about it, but you just carry on swimming when you're drowning."* (F2). Crystallisation was suggested to be a gradual process which was ongoing after the intervention. "*After a few days I got what it was meant to do*" (CYP3).

Category 3. Safe and Empowering Environment

The environment created by the facilitators of the EAI was described by all interviewees as important to facilitating change. Descriptions of the environment were categorised into providing safety or providing empowerment. The environment was suggested to interact with all aspects of the intervention and participant engagement.

Safe.

Factors contributing to a sense of safety included participants being supported to engage with the EAI at their own pace, in a manner adapted to suit their needs. *"As her confidence built, [the facilitator] just eased her into other tasks that she could do, and if [my daughter] wasn't having a good day then we'd just take a step back, and nothing was ever pushed. It was always worked around how [my daughter] was feeling on the day"* (P2). Importantly, participants were not pressured to do anything they did not want to do. "*I was very nervous about that. But when I said that, they said, "That's fine, we don't have to*."" (CYP5). "*I know that they are really good down there. That they will never push somebody beyond their fear factor"* (R1*).* Additionally, the design of the course minimised perceived pressure through its quiet environment and the focus on the horse rather than the participant. *"Here your centre of attention is the horses, but as well as... because you believe you're helping the horses, but also you are helping yourself without noticing really until the end, and that definitely took away the embarrassment and shyness."* (CYP7)*. "It's like a nice, quiet environment"* (CYP3).

The friendly, understanding, and attentive qualities of the facilitator were also suggested to put participants at ease. "*It's so friendly here, and no one judges*" (CYP4). "*It's like they understand why I react like I do*" (CYP3). For some participants, this may have offered a new experience of interpersonal relationships. "*I think that's really important that the facilitator is paying such close attention and, you know, people that maybe haven't been parented that brilliantly, that's a very novel experience and a positive one*" (F2).

Empowering.

Factors contributing to the 'empowering' environment included the facilitator giving agency to participants by giving clear guidance to support skill development and success in tasks. "*They*

were helpful, so if they said something and you did it wrong, they would help you be able to do it. They would either come and show you how to do it or they would do it with you, step-by-step" (CYP3). Facilitators also offered choice and control over how the EAI was conducted. "*They always ask you, "Is there anything you want to do tomorrow? Is there a particular horse you want to work with?"* (CYP5).

Further, interviewees noticed that facilitators held participants in high esteem, and identified this as contrary to some participants' past experiences. This included the importance of being trusted and being expected to succeed. *"They showed me first and then they were like, 'You can do it now.' The fact that they let me literally take the rein and make the horse do stuff made it better".* (CYP6). "*People expect you not to be able to do it. A lot of it is 'You can't, or you won't' and here it's just like 'Yes you can, get on with it.' [laughter] Not in that blunt way but in essence. It just gives you the chance to go oh, I'm actually being responsible for something, yes!"* (CYP4). Encouragement and praise given by the facilitator was also noted as important. "*They were really motivating. They were like, 'You can do it. Don't give up.' They were just so lovely. I've never met a group of people that were so understanding."* (CYP7).

Category 4. Change

Changes occurring from the EAI were understood as contributing to participants feeling more able and hopeful.

More Able.

Interviewees described participants as being able to use skills they had learnt during the EAI in new situations, allowing them to identify and regulate their emotions, and respond differently to challenges. "S*he's got some skills now where she can think 'body language – relax, calm, focus, go*'" (P2). "*I was able to just take a deep breath and I was able to communicate so I got all the*

stuff that was on my chest out and I was able to relax and I just imagined that I was constantly around one of the horses so I had to keep relaxed" (CYP4). For some participants, this appeared to be an embodied sense of calmness, learnt from the EAI. These changes appeared to lead to secondary benefits, including improvements in behaviour and communication. "*If you saw me and then saw me how I'd changed now, you would think I was a different person. I would be screaming at teachers, screaming at kids, hitting kids, throwing things in classrooms and stuff. And now I feel more calm and I just feel like this is what's made me calmer, coming here"* (CYP3).

Participants were described as having gained greater self-belief and confidence across settings. *"She was pleased with what she'd accomplished, what she'd learnt, the confidence it gave her. The confidence it gave her with other situations"* (P2). This was connected to participants' sense of achievement and experience of surpassing their expectations of themselves. "*I was like - I can't believe like I've done that. I never knew I would have been able to do that."* (CYP1). For some participants, this improved self-belief appeared to be part of a wider improvement to their self-esteem. "*It teaches her respect for herself… She takes pride in her appearance now. Whereas before she wouldn't"* (P1).

More Hopeful.

Changes were reported in participants' increased sense of hopefulness about the future. Participants' enjoyment of the EAI and experiences of success related to participants becoming more positive in mood, believing they could have a more positive future, and being motivated and confident to try new things. "*It was about a year she was in this dark place. So… then to see her all of a sudden, come out of it, see a future for herself …*" (P1). "*It's… making me feel like I can do more in life than I used to be able to do"* (CYP1).

Participants were described as more hopeful in relationships with others, perceiving people as more likely to be kind or helpful following their experiences during the EAI. "*When I met the people, they were actually really nice, so it made me think maybe teenagers aren't that scary… I notice more now that people aren't as scary as I think they are… most people I can give a chance. They won't bite my head off"* (CYP6). *"I guess, being with the horse that listened to me and kind of understood me, in a way, helped me realise that there are people that are trying to help me."* (CYP2). Consequently, participants felt able to open up and communicate with others in new ways. "*I think people notice that I talk more, in a good way, and that instead of just shuffling up in a ball not wanting to do stuff I actually do sometimes give it a chance that it can't go that bad*." (CYP6). "I*t gave me courage to tell my mum how I was feeling*" (CYP2).

The combination of these changes was suggested by some interviewees to facilitate reconnection with education or other professionals. "*The hope is that they will be able to re-enter successfully into their talk-based therapy… that they will re-engage with their professional"* (F1). *"Afterwards I am going to school, so it got me there*" (CYP6).

Loss.

The ending of the EAI was associated with an experience of sadness and loss for participants. "*I was quite upset because I quite enjoyed coming here*" (CYP3). Additionally, over time, some participants experienced a gradual sense of loss in the changes they had made. "*Unfortunately, now, a year down the line, those skills - she hasn't kept hold of them. She's not able to home in on them as quickly as she used to not long after the course*." (P2). "A*t the time, my confidence was like getting really good, and because it's been a couple of months since it happened, my confidence is getting better but going back down a bit*." (CYP1). This deterioration in changes was associated with the experience of returning to the challenges of participants' daily lives. "*I*

think it's just from what happens at school with bullies and all that. It like pulls my confidence back down." (CYP1).

Some participants and their supporters responded to this loss with a desire to return to the EAI. "*She would have liked to have carried on*" (P2). "*I wish it was longer… I think just another boost of it will build her confidence a little bit more"* (P1). Of these, some participants found ways to reconnect with the EAI through voluntary work, research, or pursuing similar hobbies, which may have served to reconnect them to aspects of the EAI that facilitated change. *"It has encouraged a couple of young people to go on and do some animal welfare and healthcare courses and volunteer*." (R2).

Category 5. External Support

The role of external supporters (including family, referrers, school, and other professionals) could facilitate or impair participants' engagement and experience of change in the EAI.

Facilitating.

Supporters could facilitate engagement and change through making referrals, offering encouragement, and supporting participants to manage anxieties in order to attend. "*I take them down, say the week before so that they've got a mental picture of the environment... With anybody that's really anxious I would try and do that. Just so that they can prepare themselves a little better*" (R1). Supporters could offer practical support, such as bringing participants to sessions, allowing time away from school, and reducing external demands to give participants time to engage. *"[My mum] drove me the first day and then Tuesday and Wednesday [my teacher] dropped me off"* (CYP6).

Supporters also played an important role for many participants by witnessing and validating changes. "*If I can get the parent to attend the last session – it's just a shared experience that they*

can acknowledge that there has been progress… And that is quite a special time, very often, at the end." (R1). Supporters reinforced changes for some participants through learning new skills and gaining a new understanding of the participant, enabling them to respond to the participant differently. "*It also taught me ways to help my child* "" (P2). "*To have a parent see how, with the right support, their child can blow their mind, can exceed all their expectations is really important*." (F2).

Some participants benefitted from increased support across settings during the EAI and after, although these variations may have confounded outcomes from the EAI. "*I had them helping me as well. And I had a [charity] worker. It's all different things that they're trying to help me with and stuff." (CYP3).* "*It pairs really well together. …There are things you take in from counselling to come here, there's things you take in from here to go to counselling*" (CYP5).

Impairing.

Contrastingly, the absence of the factors described above, or the presence of greater challenges in participants' everyday lives, could restrict participants' chances of engaging successfully in the EAI and experiencing positive changes. "*I think, for some people where it hasn't worked, the ones we feel really tragic about – is where we feel like they have made some really good changes, but they're being plopped back into a life that is so chaotic and so toxic*" (F2) . "*Sometimes just working with the child or the person isn't enough*" (F1).

Discussion

This study used qualitative GTM to develop a theory of the process of change within an EAI for CYP, grounded in the accounts of participants, facilitators, parents, and referrers who had all experienced or witnessed successful completion of the EAI. This study adds to the existing literature by offering further evidence of psychological benefits of EAIs for CYP; proposing key

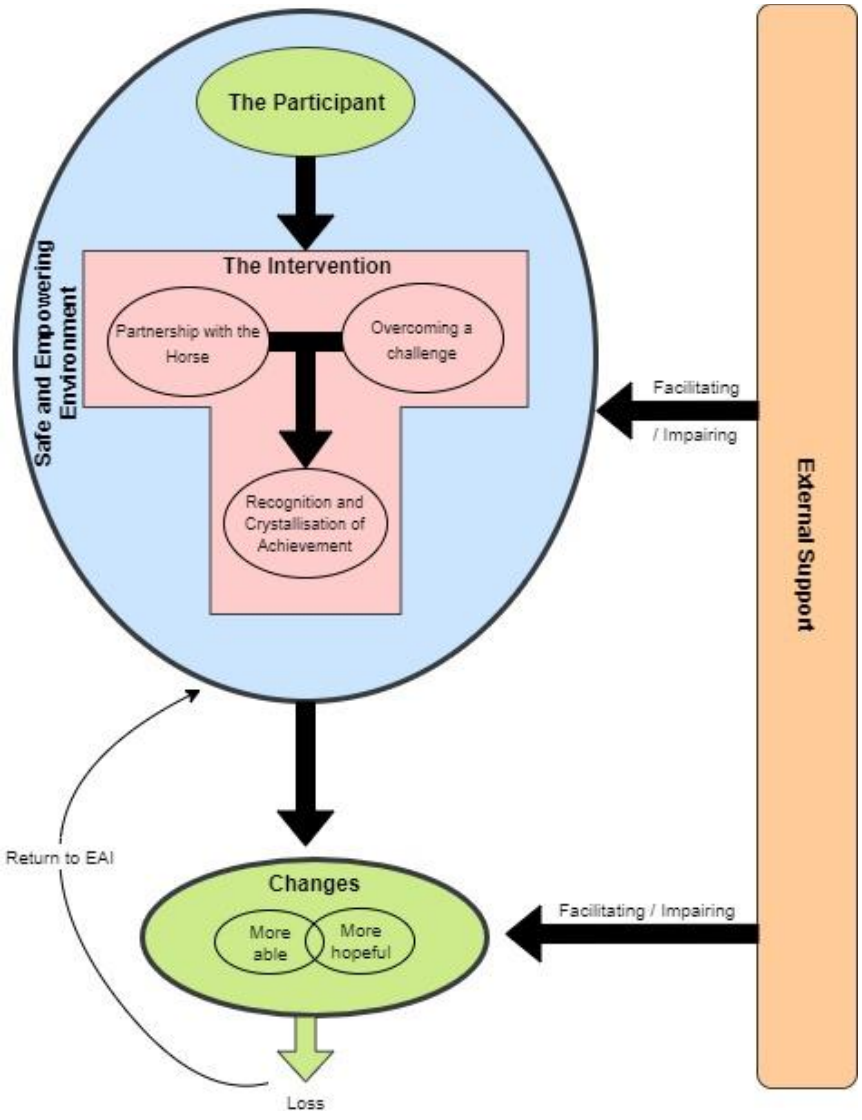
components of EAIs that may effect change; and offering a theory of *how* key components of EAIs can contribute to psychological change in CYP.

Overview

Figure 6 shows a model of the proposed theory of change, highlighting key components suggested to affect change, and proposed relationships between these components.

The proposed model shows the journey of the **participant** through the EAI and the key processes of the **intervention** (comprised of three stages: 'overcoming a challenge', 'partnership with the horse', and 'recognising and making sense of achievement'). These occur within the **safe and empowering environment** of the course. The model locates **changes** outside the EAI – having been transferred to participants' everyday lives. Changes were defined within two categories – 'feeling able' and 'feeling hopeful'. For some participants change was followed by a sense of loss, which could lead to a desire to return to the EAI. The role of **external support** is shown as interacting with the intervention, working to facilitate or impair the process of change.

Figure 6. A model of a grounded theory of change in an EAI



Theory Development

The proposed theory suggested a complex, multi-stage model that followed the journey of the participant from initial engagement until after completion of the intervention, and allowed for variability in participants' experiences, expectations, and levels of external support.

Each identified category was supported by the views of all participant types, suggesting shared perspectives regarding key components that may change. Within sub-categories, however, more variance was observed. This was expected due to the differences in participant experiences

and the nature of the final theory being an overview and synthesis of the data collected, rather than a perfect reflection of any one account (Urquhart, 2013). Variability in perspectives of participants was particularly apparent within the sub-category 'It can work for anyone, but not everyone' where timing was not viewed to be important by some facilitators and successful participants. However, referrers suggested that participants who had not experienced successful engagement or outcomes from the EAI had perhaps received the intervention at the wrong time, highlighting that the EAI was not always successful for all. Further, the sub-category of external support having an 'impairing' influence was only reported by facilitators and referrers who had witnessed *both* successful and non-successful engagement and outcomes of the EAI. It is likely that this variance also reflected biases and limitations within each sub-group of participants in this study. For example, all participants and parents had only experienced successful completion of the course, and facilitators were at greater risk of bias in reporting as they were likely motivated to highlight the benefits of their work.

Previous research has suggested that CYP may have less insight into their difficulties at younger ages, thereby limiting the utility of self-report (Edelbrock, Costello, Dulcan, Kalas & Conover, 1985). Further, it could be expected that CYP who had not engaged successfully in talk-based therapies would be unlikely to engage successfully in qualitative research interviews. However, the findings of this study contradicted these expectations, highlighting the meaningful contribution that CYP participants can make in qualitative research in this field. CYP participants engaged in approximately hour-long interviews, offered narratives of their experiences, and showed varying degrees of insight into change processes that appeared consistent with levels of insight (or crystallisation as described in this study) of other participants.

Connection to Wider Research

The proposed theory shows similarity to wider research exploring processes of change in EAIs. The theory builds upon research by Hemingway et al. (2019) who identified an increase in participants' emotional arousal when completing activities with the horse which was followed by a positive outcome. This could be argued to mirror the processes described in the category 'overcoming a challenge'. The theory also shows similarities with other qualitative studies completed with CYP or facilitators which highlighted the importance of factors including the relationship formed between the CYP and horse, the horse mirroring behaviours, the participant overcoming a challenge, and parental involvement in interventions (McNamara, 2017; Wilson et al., 2017; Dunlop & Tsantefski, 2018). These similarities lend support to the validity of the components identified in this study.

Similarities are also evident with findings from alternate types of interventions and other populations. For example, a study exploring therapeutic riding for the disabled highlighted a change process including the development of skills, an environment facilitating learning and a sense of agency, and the transfer of skills outside of the environment which are suggested to occur via processes including the development of the participants' self-concept (Martin, Graham, Taylor, & Levak, 2017). Further, a study exploring effects of horse-riding on an EAI with CYP with ASD suggested that through a process similarly focused on interacting with the horse and going at the pace of the CYP, the EAI supported development of social skills and self-regulation – leading to reduced hyperactive behaviour, improved social functioning, and reduced ASD symptom severity (Harris & Williams, 2017).This may mirror the processes of partnership with the horse within a supportive environment, leading to development of appropriate social behaviours, as proposed in the current study. These wider similarities suggest that the proposed theory may have the potential

to be abstracted to a greater level, although further research is needed to explore what types of intervention this would include and why.

Finally, the theory shows overlap with other psychological theories that have been connected to change processes in EAIs (described below; Burgon, Gammage, & Hebden, 2018; Watson, 2019). These theories offer further insight into potential processes within the proposed theory, and their similarities with the model lend support for its validity.

Connection to Psychological Theories.

Changes appear most in line with the concept of improved 'self-efficacy', which is suggested to reflect individuals' beliefs about their abilities and likelihood to cope with challenges in the future (Bandura, 1977). Self-efficacy is understood as being strengthened by experiences including performance accomplishment (such as the experience of success in the EAI) and the experience of reduced emotional arousal (such as tasks feeling easier over time in the EAI). The role of cognitive appraisals (or crystallisation) is also highlighted as contributing to self-efficacy being generalised to new situations. These processes mirror many aspects of the proposed theory - suggesting that the development of self-efficacy may offer a simplified explanation of much of the change process within the EAI. However, the proposed theory expands this further, offering consideration of wider factors that affect this process.

Further theories were also identified which showed similarities and offered insight into different aspects of the proposed theory. These are summarised in the paragraphs below.

Firstly, identified changes show similarity to reduced levels of depression. For example, participants' anxieties on entering the EAI appeared similar to Beck's cognitive triad (Beck, 1987) which conceptualises the thoughts of someone experiencing depression as having negative beliefs about oneself, the world (others), and the future. This triad also mirrored the changes that many

participants experienced, suggesting that the EAI may support the reduction of depressive thinking styles.

Changes in participants' beliefs about and relationships with others could also be suggested to reflect aspects of attachment theory (Ainsworth & Bowlby, 1991). Participants' negative experiences and expectations about themselves and others could, for some participants, be understood as arising from early insecure attachments with caregivers, where caregivers were experienced as unsafe or unreliable. Participants' experiences of feeling safe and empowered in the EAI environment and with the horse mirrored the concept of secure attachments, where the caregiver was supportive, reliable and responsive. Secure attachments can enable individuals to feel safe in trying out new behaviours and may have contributed to participants' shifts in beliefs about themselves and others.

Changes in beliefs about the self could also reflect changes in identity, which has been previously suggested to change in response to EAIs by Wanneberg (2014).

The process of the intervention may reflect principles of operant conditioning (Skinner, 1938) where behaviour change led to desirable outcomes and was reinforced by repeated combinations of behaviour and outcome. Further, anxieties triggered by challenges diminished through repeated exposure to the challenging situation, reflecting the process of habituation (Rankin et al., 2009). Participants' increased awareness of their emotional and behavioural states and perceived changes in emotion-regulation and calmness could be likened to those typically observed in mindfulness practices (Brown, Ryan & Cresswell, 2007).

The transfer of changes from the EAI to daily life could be understood as being facilitated by the formation of embodied knowledge which is known physically (Tanaka, 2011), and for some

participants by the formation of crystallised knowledge which is known conceptually (Cattell, 1972).

In line with systems theory, this study also highlights the important role of the systems supporting individuals in facilitating and maintaining change. This included the environment created by the facilitator during the intervention, and the role of external supporters (Adams, Hester & Bradley, 2013).

Clinical Implications

The findings of this study offer further evidence suggesting that EAIs can benefit the psychological wellbeing of CYP, strengthening findings of recent reviews (Lentini & Knox, 2009; 2015). The proposed theory suggests a process similar to the development of self-efficacy; leading participants to feel 'more able' and 'more hopeful', which may be associated with secondary changes in areas such as reduced challenging behaviours and improved school engagement.

The proposed theory provides an interpretation of change processes in EAIs based on a synthesis of relevant perspectives which may be useful to guide practitioners to increase effectiveness of EAIs for participants. This study suggests possible key components of EAIs, and qualities that components may need to facilitate change, highlighting how these can work to facilitate or impair change. For example, past research has expressed concerns about novelty effects of EAIs and efficacy of repeat interventions. The concept 'overcoming a challenge' offers further insight into this concern, suggesting that if the level of challenge can be maintained in future interventions, positive outcomes are still likely to be observed. The identified components importantly suggest that clinicians consider the role of factors beyond the direct intervention, including the environment created to support participants, participant individual differences, and the

role of external support – all of which are suggested to have significant parts to play in contributing to EAI effectiveness.

Limitations

The final theory offers a suggestion of key components of EAIs and their relationship to change, based on the collected data. It should be interpreted as such – as a suggestion rather than proof (Glaser, 1978; Biaggi & Wa-Mbaleka, 2018). Although steps were taken to minimise bias throughout the study, the findings should be understood as reflecting one interpretation of the collected data, in line with an interpretivist standpoint.

Considering the variance of EAI methodologies across the field, the proposed theory may be limited in its applicability to other EAIs that differ from the assessed intervention. It is possible that EAIs that include a greater emphasis on therapeutic discussions, group work, or fewer practical components will differ in both the process of change, and the changes observed from the EAIs.

The findings of this study offer a limited perspective on change based on the views of a small sample of people who had experienced successful interventions, were identified by staff at the service, chose to be interviewed, and were all female. Larger and more diverse sampling was restricted by time and practicalities in recruitment, limiting findings to reflect only a small subset of people engaged in EAIs. It is possible that others may experience the EAI differently and benefit in different ways.

Future research

This study contributes to literature exploring change processes in EAIs. The findings would benefit from being replicated and developed in future research, particularly with a more diverse sample in all aspects, using a different EAI, and being completed by other researchers to support

generalisability, reliability, and validity of the results, and minimise the impact of bias from one researcher's interpretation.

To access the views of a wider sample including participants who may find it difficult to engage in interviews, the findings could be developed through use of quantitative methods to further explore the components (or mechanisms of change) identified in this study.

This study highlights factors influencing change, many of which may be similar in other experiential interventions. To benefit clinicians who are searching for time and cost-effective interventions, future research could explore similarities and differences between EAIs and other experiential interventions, and further explore which interventions may be most effective for this population.

Conclusion

This study adds to the growing field of research exploring change within EAIs by offering a theory of change that suggests key components of an EAI intervention that may affect change, and considers how these connect to the observed changes of participants feeling more able and hopeful. The proposed theory is compared to wider psychological theories, notably highlighting a similar process to the development of self-efficacy. Although the study is limited by a small sample, it offers an interpretation of the experiences of a range of different participants and suggests benefits of EAIs. Findings may offer guidance to practitioners and suggest directions for future research.

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Section C: Appendices of Supporting Material

Appendix A: SURE Quality Appraisal Checklist for Experimental Studies

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Appendix B: SURE Quality Appraisal Checklist for Qualitative Studies

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Appendix C: Ethical approval

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Appendix D: Information sheet and consent form for young people

Canterbury Christ Church University

[redacted] PARTICIPANT CONSENT FORM

Project: How do people experience [redacted]? Developing a model of what supports change

Researcher: Fiona Thornton

Please put your initials in the box to indicate if you agree to each item

1. I have read and understand the information sheet about this study. I have had the opportunity to think about the information and have had any questions answered.	
2. I understand that it is my choice to take part in this study and that I can decide not to take part anymore at any time without giving any reason.	
3. I know that my interview will be audio-recorded and agree to this. I understand that anything that I say will be kept private and confidential.	
4. I agree that Fiona may use quotes from my interview (she will change my information so that it is anonymous) in the reports of the findings of the study.	
5. I agree that Fiona may access video footage of my participation in [redacted], if available, which may be used and discussed during my interview. *(Optional)*	
6. I agree that the recording of my interview can be shared with a transcriber who will write out what was said. I understand that the transcriber will keep my data private and transfer it securely to Fiona. *(Optional)*	
7. I agree to take part in this study.	
8. I would like to be sent information about the findings of the research when the study is complete. *If yes, please provide a contact email address: (Optional)* _____ *This email address will be kept on our mailing list until the end of the study and will not be associated with any other information that you share with us.*	

Name of Participant_____ Signature _____

Date_____

If the participant is under 16: Name of Parent/Guardian_____

Signature _____ Date_____

Name of Person taking consent _____

Signature _____ Date_____

Version 4 – 12th May 2019

Canterbury Christ Church University

Information Sheet

How do people experience [redacted]?
Developing a model of what supports change

Who are you?

My name is Fiona Thornton and I am a Trainee Clinical Psychologist at Canterbury Christ Church University.

What is the research for?

I want to find out what changes young people experience when they complete a course with The [redacted] and what it is about the course that works well, or doesn't work so well. I hope to develop a theory about what can help people to make changes.

This research is being organised by the Salomons Centre for Applied Psychology and funded by Canterbury Christ Church University. It has been reviewed and approved by The Salomons Ethics Panel.

Why have I been invited?

- You previously agreed with [redacted] to be contacted for future research.
- You are between 14-18.
- You have recently completed a [redacted] programme.

Parents/Guardians/Referrers

Parents/guardians, and referrers of young people may also be invited to be interviewed to understand how they experience The Horse Course. Any information they share will be kept confidential and anonymised. This information will not be associated with you in any way.

Do I have to take part?

No. It's your choice. If you decide that you would like to participate, you are always free to change your mind and decide not to take part in the study anymore at any time, without giving a reason.

What's involved?

1. Complete the 'Yes, I'm interested' form and give this back to the staff.

Selection Phase
We are trying to get a mixture of people of different ages, genders, and experiences to take part in the research, so only some people will be contacted to participate

2. If you are selected, I will call/email you within 6 months from returning your form to arrange a time for an interview at [redacted] and will send you a copy of a consent form.

The Interview

3. I will explain everything about the study and ask you to sign the consent form if you choose to take part.

4. We will talk for about 1 hour and I will ask you some questions about your experience at The [redacted] such as what you found helpful or unhelpful about the course, and any changes that you have noticed since completing the course. This interview will be audio-recorded. **It is up to you what you want to tell me, and you can choose not to answer any questions.**

After the Interview

5. I may contact you again to arrange a short phone interview to ask some additional questions, and to check that I fully understood what you told me. This may last for up to 20 minutes.

Travel

Interviews will be held at [redacted] Headquarters in [redacted]. We will offer to reimburse any travel costs to or from the interview up to a maximum of £10.

Version 2 – 12th May 2019

What will happen to the information I give you?

All information which you give me during the study will be kept strictly private and confidential.
The only time that I would share any information is if I am concerned that there is a risk of harm to you or someone else. I would have to pass this information on to [redacted] may let other people involved in your care know.

When I write about the findings of my research, I might include quotes from your interview which will be anonymised. I will anonymise any information that you share with me by removing your name and any other personal details so that you cannot be recognised.

You will not be identified in any report/publication. Anonymised quotes from your interviews may be used in published reports.

During the research, your personal information and audio-recordings will be kept securely in an encrypted system which will only be accessible to me. If you are happy for me to securely send your recording to a transcriber, they will write up what was said in the interview and send this securely back to me. I will transcribe your interview myself if you would prefer this not to be sent to a transcriber.

The audio-recordings will be anonymised when they are typed up (transcribed). Anonymised information will only be accessed during the study by myself and the research team at the Salomons Centre for Applied Psychology in order to monitor the quality of the research.

Any personal information that I have about you will be destroyed at the end of the study. The information that I collect that has no names or personal information in it will be kept in a secure, password-protected system by Canterbury Christ Church University and destroyed after 5 years.

Are there any risks of taking part?

Some people find it difficult or distressing talking about their experiences, and it is possible that you might experience this during the interview. It is important that you think about this, and remember that you can choose what you want to talk about and only share what you feel comfortable to.

What are the benefits of taking part?

I can't promise that this research will help you, but the information from this study will help to improve the experience for people taking part [redacted] other, similar courses in the future.

What will happen to the results of the research study?

The results of the study will be published as part of a Major Research Project at the Salomons Centre for Applied Psychology. The Horse Course will have a summary of the findings. If you have given me your details I will also send you a summary.

What if there is a problem?

If you have any concerns about the study, please do not hesitate to contact me on the details below.

If you remain unhappy and wish to complain formally, you can do this by contacting Professor Paul Camic, *Research Director, Salomons Centre for Applied Psychology*: paul.camic@canterbury.ac.uk.

Further information and contact details

To find out more about the study or have questions about it answered, you can contact me at:
f.j.thornton73@canterbury.ac.uk
OR you can leave a message for me on a 24-hour voicemail phone line at 01227 927 070. Please say that the message is for *Fiona Thornton* and leave a contact number so that I can get back to you.
If you would prefer to contact me in writing, please use the following address:
F.A.O. Fiona Thornton, Salomons Centre, 1 Meadow Road, Tunbridge Wells, Kent. TN1 2YG

Version 2 – 12th May 2019

Appendix E: Information sheet and consent form for alternative participants

Canterbury Christ Church University

ALTERNATIVE PARTICIPANT CONSENT FORM

Project: **How do people experience [redacted] Developing a model of what supports change**
Researcher: **Fiona Thornton**

Please put your initials in the box to indicate if you agree to each item

1. I have read and understand the information sheet about this study. I have had the opportunity to think about the information and have had any questions answered.	
2. I understand that it is my choice to take part in this study and that I can decide not to take part anymore at any time without giving any reason.	
3. I know that my interview will be audio-recorded and agree to this. I understand that anything that I say will be kept private and confidential.	
4. I agree that Fiona may use quotes from my interview (she will change my information so that it is anonymous) in the reports of the findings of the study.	
5. I agree that the recording of my interview can be shared with a transcriber who will write out what was said. I understand that the transcriber will keep my data private and transfer it securely to Fiona. *(Optional)*	
6. I agree to take part in this study.	
7. I would like to be sent information about the findings of the research when the study is complete. *If yes, please provide a contact email address: (Optional)* _____ *This email address will be kept on our mailing list until the end of the study and will not be associated with any other information that you share with us.*	

Name of Participant_____ Signature_____

Date_____

Name of Person taking consent _____

Signature _____ Date_____

Version 4 – 12th May 2019

Parent/Guardian/Referrer Information Sheet

Canterbury Christ Church University

How do people experience [redacted]?
Developing a model of what supports change.

Who are you?

My name is Fiona Thornton and I am a Trainee Clinical Psychologist at Canterbury Christ Church University.

What is the research for?

I want to find out what changes young people experience when they complete a course with The [redacted] and what it is about the course that works well, or doesn't work so well. I hope to develop a theory about what can help people to make changes.

This research is being organised by the Salomons Centre for Applied Psychology and funded by Canterbury Christ Church University. It has been reviewed and approved by The Salomons Ethics Panel.

Why have I been invited?

- You previously agreed with [redacted] to be contacted for future research.
- You are the parent/guardian/referrer of a young person aged between 14-18 who was referred to [redacted].

Do I have to take part?

No. It's your choice. If you decide that you would like to participate, you are always free to change your mind and decide not to take part in the study anymore at any time, without giving a reason.

Travel

Interviews will be held at [redacted] Headquarters in [redacted]. We will offer to reimburse any travel costs to or from the interview up to a maximum of £10.

What's involved?

1. Complete the 'Yes, I'm interested' form and give this back to the staff.

Selection Phase

We are trying to get a mixture of people of different ages, genders, and experiences to take part in the research, so only some people will be contacted to participate

2. If you are selected, I will call/email you within 6 months from returning your form to arrange a time for an interview at [redacted] HQ.

The Interview

3. I will explain everything about the study and ask you to sign a consent form if you choose to take part.
4. We will talk for about 1 hour and I will ask you some questions about your experience at The [redacted], such as what you found helpful or unhelpful about the course, and any changes that you have noticed since the course. This interview will be audio-recorded. **It is up to you what you want to tell me, and you can choose not to answer any questions.**

After the Interview

5. I may contact you again to arrange a short phone interview to ask some additional questions, and to check that I fully understood what you told me. This may last for up to 20 minutes.

What will happen to the information I give you?

All information which you give me during the study will be kept strictly private and confidential.
The only time that I would share any information is if I am concerned that there is a risk of harm to you or someone else. I would have to pass this information on to staff at [redacted].

When I write about the findings of my research, I might include quotes from your interview which will be anonymised. I will anonymise any information that you share with me by removing your name and any other personal details so that you cannot be recognised.

You will not be identified in any report/publication. Anonymised quotes from your interviews may be used in published reports.

During the research, your personal information and audio-recordings will be kept securely in an encrypted system which will only be accessible to me. If you are happy for me to securely send your recording to a transcriber, they will write up what was said in the interview and send this securely back to me. I will transcribe your interview myself if you would prefer this not to be sent to a transcriber.

The audio-recordings will be anonymised when they are typed up (transcribed). Anonymised information will only be accessed during the study by myself and the research team at the Salomons Centre for Applied Psychology in order to monitor the quality of the research.

Any personal information that I have about you will be destroyed at the end of the study. The information that I collect that has no names or personal information in it will be kept in a secure, password-protected system by Canterbury Christ Church University and destroyed after 5 years.

Are there any risks of taking part?

Some people find it difficult or distressing talking about their experiences, and it is possible that you might experience this during the interview. It is important that you think about this, and remember that you can choose what you want to talk about and only share what you feel comfortable to.

What are the benefits of taking part?

I can't promise that this research will help you, but the information from this study will help to improve the experience for people taking part in [redacted] or other, similar courses in the future.

What will happen to the results of the research study?

The results of the study will be published as part of a Major Research Project at the Salomons Centre for Applied Psychology. The [redacted] will have a summary of the findings. If you have given me your details I will also send you a summary.

What if there is a problem?

If you have any concerns about the study, please do not hesitate to contact me on the details below.

If you remain unhappy and wish to complain formally, you can do this by contacting Professor Paul Camic, *Research Director, Salomons Centre for Applied Psychology*: paul.camic@canterbury.ac.uk.

Further information and contact details

To find out more about the study or have questions about it answered, you can contact me at:
f.j.thornton73@canterbury.ac.uk
OR you can leave a message for me on a 24-hour voicemail phone line at 01227 927 070. Please say that the message is for *Fiona Thornton* and leave a contact number so that I can get back to you.
If you would prefer to contact me in writing, please use the following address:
F.A.O. Fiona Thornton, Salomons Centre, 1 Meadow Road, Tunbridge Wells, Kent. TN1 2YG

Appendix F: Interview Questions

This schedule shows the final version of the interview schedule with many questions based on the emerging theory. Questions were adapted to suit different participant types, and held loosely in order to prioritise responding to what participants reported and minimise leading questions.

How do people experience equine-assisted interventions?
Developing model of what supports change

Canterbury Christ Church University

Semi-Structured Interview Schedule

Clarify consent – go through consent form and answer any questions

Thank you for agreeing to meet with me today. So, I would like to find out more about your time at the service and what you thought about it.

Before we start, just to let you know - anything you tell me will be recorded on this Dictaphone and this will be kept confidential, so I will not share what you have said with anyone else. The only time I would have to tell someone would be if you let me know that you or someone else was in danger, and then I would have to share what you had told me in order to make sure that you're ok. Does that sound okay?

So, what I might do with the information that you tell me today is to put bits of what you have said into my research. I will make sure that any information I include is anonymous so people wouldn't be able to tell that it was you. Does that sound okay? Do you have any questions about this?

So, I don't work for the service, and it's important that you know that anything that you tell me will be kept private, and anything that I write about in my research will be completely anonymous.

I am very keen to hear about your experience at the service, so I may be quite quiet during this interview. I may ask a few questions, but it is up to you what you want to tell me and you can answer only what you want to. And if you want a break at any point, just let me know.

Do you have any questions before we begin?

Would you like your parent/guardian to stay for the interview?

Check demographics

CYP:	Parent:	Referrer:
Age	Age of child	Number of referrals to the service (approx.)

Gender	Gender of child	Date of most recent participation (approx.)
Date of course participation (approx.)	Date of child's participation (approx.)	
Duration of participation & number of courses completed	Duration of participation & number of courses completed	

General Open Questions (bringing it to mind)

- *Okay, so now I'd really like to hear about what you did at the service, and what that was like for you.*
- *What did you do? What was that like?*

Exploring Change

- *Do you think anything changed for you after your experience with the service? If so, what did you notice?*
- *Did you notice anything different about yourself?*
- *Did you notice any other changes when you were doing the course?*
- *Do you think other people noticed anything different about you since you were at the service? What would they say?*
- *What do you feel helped you to make these changes?*
- *What do you think brought about the change?*

What moments from the course do you remember most? Why do you think you remember that?
What did that mean to you when that happened?
What moments do you think were the most important in helping you to [change in that way]?

Further Detail about Possible Factors Influencing Change

Introducing idea of thinking about different areas of course that may be helpful
I know that there are lots of different parts of the course – like working the horse, with the staff, learning the tricks, being filmed, going through the star chart, and getting a video and certificate at the end. One of the things that I'm trying to do is to think about which bits are really important in helping people to make the changes that they want to make – like feeling more confident, or less worried.

- *Everyone finds different things helpful, and we might find all of it helpful, or none of it helpful – but I'm wondering, for you – what do you think were the most important bits that helped you to feel [make that change]?*
- *And what was it about that do you think that helped you [make that change]?*
- *What parts of the going to the course do you think helped you to make that change?*
- *What parts of going to the course might have made it harder to change?*
- *If I was creating a course like this one – what things would I need to include to make sure that it worked well?*

Understanding the Sessions

- *Can you tell me what happened in the sessions?*
- *What did you do?*
- *(Where video footage of sessions at the service is available, participants will be asked -) Can you tell me what is going on here?*
- *Can you remember what you thought during the sessions?*
- *Can you remember how you felt when you were doing that?*
- *Was there another participant there at the same time as you? What was that like for you?*
- *What did you take away from the sessions?*
- *Do you think the sessions affected the changes you experienced?*

Referral

- *What led you to be referred to the service?*
- *What was happening in your life just before you started the course?*

Expectations

- *Was it what you expected?*
- *What did you think the course would be like?*
- *Was anything different to what you thought it would be like?*
- *What did you hope might be different after you went to the course?*
- *Q (YP) – did you have a clear idea of what you thought the service would help you with? What you wanted to be different by the end of it? Do you think it was important to know what you wanted to change?*
- *Q (Other) – did you have a clear hope for what X would get from the service? Was this communicated to X? do you think this you think this had an impact on that change happening?*

The Horse

- *What was the horse like?*
- *How did you feel about meeting the horse?*
- *Did you feel that you learnt anything from working with the horse?*
- *(If changes previously identified) How do you think that the horse helped you to make these changes?*
- *Do you think the course would be different without the horse? Why? How does the horse make it different?*

The Facilitators

- *What were the staff like at the service?*

Timing

- *Q – some people have said that it's important that it's the right time for someone to go to the service – do you think there's a right time? What do you think makes it the right time to go?*

Supporters

- *Q for YP – is it important to have someone there with you during the course, watching? Why is it important? Would you have wanted someone there each session? What difference do you think it made for you having someone there or not? Do you think it helped you to make the changes you mentioned?*
- *Did you share what you did here with other people in your life? What was that like?*

Impact on self-esteem

- *Do you think the course helped you to feel more confident or proud?*

Transferability

- *How easy or hard did you find it to apply the skills you learnt here outside of the course?*

The Ending

- *What was the ending of the course like for you?*

Responsibility/Trust

- *Some people have said that it was important to feel trusted and be given responsibility during the course – What do you think about that?*
- *Do you think that feeling trusted affected the changes you experienced?*

Learning in the Body or Mind?

- *This might be a strange question – but do you think what you learnt at the service was something you learnt in your body or in your mind?*
- *Some people have said they felt physically calmer, and others said they learnt new ways of thinking about things? What do you think about this? How do you think you experienced the changes you mentioned?*

Problem-focused

- *Some people have suggested this helps because you don't have to talk about your problems. What do you think? Was this something you experienced? Did this seem important?*

Closing Questions

- *Is there anything else you would like to tell me?*
- *Do you have any questions for me before we finish?*

Appendix G: Transcription Agreement

Canterbury Christ Church University

Salomons

Applied Psychology

Confidentiality Statement for Persons Undertaking Transcription of Research Project Interviews

Project title _____

Researcher's name _____

The tape/s or recording/s you are transcribing have been created as part of a research project. Tapes may contain information of a very personal nature, which should be kept confidential and not disclosed to others. Maintaining this confidentiality is of utmost importance to the University. Signing this form means you agree not to disclose any information you may hear on the recording to others, and not to reveal any identifying names, place-names or other information on the recording to any person other than the researcher/s named above. You agree to keep the recording in a secure place where it cannot be accessed or heard by other people, and to show your transcription only to the relevant individual/s who is involved in the research project, i.e. the researcher/s named above.

You will also follow any instructions given to you by the researcher about how to disguise the names of people and places talked about on any redordings as you transcribe them, so that the written transcript will not contain such names of people and places.

Following completion of the transcription work you will not retain any recordings or transcript material, in any form. You will pass all tapes back to the researcher and erase any material remaining on your computer hard drive or other electronic medium on which it has been held.

c:\users\vc37\appdata\local\microsoft\windows\temporary internet files\content.ie5\54c9c5rw\transcribing agreement july 2011.doc

Canterbury Christ Church University

Salomons

Applied Psychology

You agree that if you find that anyone speaking on a tape is known to you, you will stop transcription work on that tape immediately and pass it back to the researcher.

Declaration

I agree that:

1. I will discuss the content of the recording/s only with the researcher/s named on the previous page.
2. I will keep all recordings in a secure place where they cannot be found or heard by others.
3. I will treat the transcripts of the recordings as confidential information.
4. I will agree with the researcher how to disguise names of people and places on the recordings.
5. I will not retain any material following completion of transcription.
6. If the person being interviewed on a recording is known to me I will undertake no further transcription work on the recording and will return it to the researcher as soon as is possible.

I agree to act according to the above constraints

Your name _____

Signature _____

Date _____

Occasionally, the conversations on recordings can be distressing to hear. If you should find it upsetting, please speak to the researcher.

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Appendix H: Sample transcript

Removed from the electronic copy

Appendix I: Initial codes

The following tables show how initial codes were combined into categories and sub-categories. The initial codes given are not exhaustive and a single code is used in this diagram where multiple codes described the same experience.

Theme 1: The Participant

Category	Sub-Category	Codes
1.1 Hesitation	1.1.1 Uncertainty	Wasn't too sure what to expect
		horse riding
		Some are just doing it because someone told them to
	1.2.1 Past difficult relationships	Others can be unsafe / don't understand
		Bullying
	1.2.3 Past difficult experience of therapies	Negative / didn't want to talk / nothing has helped
	1.1.3 Fearful / Not ready	Hoped they liked me
		Nervous
		Negative expectations
		They don't need to be motivated / ready
		You want to help early if you can
	1.1.4 No or negative experiences with horses	No experience with horses
		Not interested
		Past loss of horse
		Anxiety
	1.2.4 Past difficulties	Self-harm/suicidality
		Anxiety
		Low confidence
		Difficulties communicating
		Anger / Challenging Behaviour
		Low mood / Withdrawn / Hopeless
		Disengaged from school
		Family conflict / domestic abuse / childhood trauma
		Family illness/strain / bereavement
		Multiple difficulties
1.2 Motivation	1.2.1 Hopeful / Motivated	Positive expectations /hopes
		Hoping for instant solutions
		Hoping for calm / Low expectations
	1.2.2 Experiences with animals	Positive attitude
		Past experience with horses can be a hindrance
	1.2.3 Past experience of therapies	Positive
	1.2.4 Timing	It was the right time
		Ideally they are motivated

		They don't have to be ready
		I didn't know I was ready / It can help anyone
		It wasn't the right time

Theme 2: The Intervention

2.1 Overcoming a Challenge	2.1.1 I had to step outside my comfort zone	It was hard
		It wasn't too hard that I freaked out
		I was nervous / uncertain
		It got me doing something
		We finally did it / finding true harmony
		Success and pride / shock / feeling good
		It wasn't too hard that I panicked
	2.1.2 I learnt new skills	Planning
		Patience / Taking things slowly
		Focusing
		Shifting to a positive mindset
		Attuning to their bodies and emotions
		Emotion regulation / controlling body language
	2.1.3 Perseverance / Repetition	Participant becoming independent
		Repetition reinforces the skill / You have to use the skills to get success
		Persistence / It got easier
		Practiced skills with a real person
		It was every day – which helped

2.2 The Horse	2.2.1 The Horse as a mirror	The horse responded if you did the right thing
		The horse feels how you feel
		I recognised how I was feeling because of the horse
		Developing an understanding of the horse
		I related to the horse / The horse was like me
		The horse has a presence / is like a person
	2.2.2 The Horse as an attachment figure	The horse is non-judgemental and helps you
		it made me feel better about myself because it was like listening
		The horse really listened / was gentle
		Feeling liked by the horse
		The horse as a partner

		I helped the horse / It brings out their caring side
		Attachment / connection

2.3 Achievement and Crystallisation	2.3.1 Success / Recognition of Achievement	We did it together
		I felt like I'd achieved something
		Feeling happy /proud *during*
		Positive feedback from staff
		Tangible evidence of change / visualises progress
		Tangible evidence of success they can share
		Rewarded with riding
	2.3.2 Making sense of the process / Crystallisation	I don't understand how it works / It's magic
		The benefit became clearer over time
		Teaching the body not the mind
		You realise you're the one learning, not the horse
		It was a metaphor for life / Transferable to other situations
		Others don't understand my metaphors

Theme 3: The Facilitator and Environment

3.1 It felt safe and comfortable / Containing	3.1.1 There's no pressure / you go at your own pace	You don't have to talk / It's different from other therapies
		The other person took the focus off me
		You go at your own pace
		They adapt the course to suit you
		They wouldn't force you / there's no pressure
		It's quiet
		It was fun and active
	3.1.2 The facilitator understands you and puts you at ease	They're attuned to participant body language
		They were kind and welcoming / make you feel safe
		They were fair/understanding/patient / different to other adults
		You can talk to them if you want to
		They were well trained
3.2 Facilitator was empowering	3.2.1 They give agency to participants	They give you choice and control
		They offer clear guidance

		They explain links between tasks and skills being developed
		They explain connections to everyday life
	3.2.2 They hold you in high regard	They expect you to succeed
		They trust you
		They offer encouragement and praise

Theme 4: Lasting Change

4.1 I can do more / Empowered	4.1.1 Making Use of Skills	Look at the situation like it was a horse
		Making use of skills
		Patience
		Improved behaviour
		Improved self-awareness / emotion-regulation
		Feeling more able to communicate
	4.1.2 Changes in Self-perception	I feel more confident
		I felt happy /proud of my achievements / good about myself
		Surpassing own expectations
		Shift in identity
4.2 Greater hope/optimism	4.2.1 Feeling more positive/hopeful	Improved mood
		I feel I can do more in life / see a better future
		I'll give things a chance
		I want to do more things / more motivated
	4.2.2 Greater trust / openness in relationships	It gave me courage to relax and open up
		It made me think that people are less scary / nicer / trying to help
		I got closer to my family
		Supporting reconnection with other professionals/school
4.3 Loss	4.3.1 Ending the Course	Sadness/Grief
		It's quite a final ending
	4.3.2 Deterioration in skills	Return to challenges in daily life
		It was successful for a while
		Confidence has gone back down
		She can't use the skills as easily
	4.3.3 Finding a way to go back	It was a good experience and helped
		More sessions
		Volunteering
		Pursuing horse work

Theme: 5 Family / External Support

5.1 Facilitating Change	Others facilitated the referral
	Preparing the participant /Managing anxiety before attending
	Others facilitated attendance
	Supporting travel
	Others are interested /proud / validate change
	Shift in parents' expectations / understanding
	Others can learn/ reinforce skills
5.2 Impairing Change	External demands
	Expectations/pressures
	Challenging environments
	Hard to know what affects long-term outcomes / Confounding changes in support

Appendix J: Theoretical memos

Excerpts taken from research diary relating to theory development:

Date / Title	Notes
August 2019	<u>Re-coding all data</u> At the moment I'm thinking that there are 3 distinctive stages in what's being described: 1. how things were before 2. what happened during 3. and what things were like afterwards. Within what happened during – it seems like there are two parts – what happened AT the course (internal), and what happened AROUND the course (external) <u>Reflections from P001</u> The main things that stuck out for me are: • how important the horse was – the relationship, the listening, the responsiveness • this idea of learning how to communicate and be heard • a sense of her becoming a bit of an expert in the course and what she did • a HUGE sense of her anticipation that everything would go wrong, or that she would be bad or wouldn't be able to do it • and a HUGE sense of her actually surpassing her expectations and thinking 'I can't believe I did that' • and having that sense reinforced by the facilitators, by the tangible signs of her achievement (star chart, video, certificate), and by her parents who were proud of her • her ability to draw connections with how she talks to others and how she can apply the same confidence in social situations as she did with the horse • the sense of loss that it went too quickly, but somehow a reinforced sense that something did change and has lasted. Thoughts: • Were the facilitators important? • How important is that family reinforcement? • How important is the idea of overcoming expectations – of self and others? And getting positive reinforcement? • Do others view it the same way? <u>From P003</u> Added in perspective of facilitators • Before the course o Facilitators had their own aims – focused on skill development. o Facilitators were aware of participant difficulties – primarily anxiety? • External o Reinforced idea about helpful and unhelpful influences of parent involvement. Opportunities like skills training courses for parents • Internal o Behind the scenes factors (e.g. training/service improvement/connection to referrers) – not sure whether to keep in. Not sure if directly connected to factors affecting change for YP. o Adding in list of skills being taught with some examples o Idea of it feeling safe – one on one and tailored to each person. Could these be combined?

	○ More reinforcement for idea of overcoming a challenge – aiming to push people out of their comfort zones; learn by doing, and ensuring this is successful ▪ Are these two separate things? Facing challenge and succeeding at it? ○ Connection with idea of 'evidence of change' – match between young people feeling they got told the good things, and facilitators trying to highlight achievements. ○ Tailored to each person – reading body language, making sure that they're pushing themselves but also feeling confident and safe. Offering activities that engage them. ○ The facilitator – (could add these points into other places? Potentially overlap with other codes?) ○ The horse – idea that the horse is an engagement tool and reinforces 'correct' behaviours
September 2019	<u>Coding P007</u> <u>Thoughts:</u> It's been interesting to compare and contrast different perspectives. Participants and facilitators are describing similar concepts but using different language. New codes emerging in factors DURING course, including: - 'Treat the horse that shows up' - Respond in a different way from others (this feels very important) - Learning through doing - There's always this absolute belief and expectation that you are going to succeed - They develop a belief that we're going to look after them - Facilitators supporting engagement of participants - Supportive Environment - Change in mindset (within Developing new skills) - ?? Theme of trust emerging across categories? - The experience of participants being in a caring role – different to usual daily life AFTER course: - 4 intermediate outcomes ○ Better relationships ○ Reduced problem behaviours ○ Better engagement with school/training/work ○ Improved sense of identity, self-belief and hope - Becoming more articulate and self-aware - We're not expecting them to get it in their heads, but in their bodies - More calm - Change in parent attitude and understanding Reflection: It's like one big behavioural experiment to overcome anxieties around communication In terms of a CBT hot cross bun – it's shifting a well-established pattern into a new environment which is controlled, experienced and supportive – where the child is set up to succeed and the supporting adult has absolute confidence in their abilities and increases their skills in doing this independently, whilst validating the challenges of what they're doing. They are giving them clear guidelines for behaviours - which the horse is also reinforcing Hard to separate process and outcomes – changes in behaviour in each – or combine into one mega process? Body awareness could also be in both?

	The idea of learning skills in the body not the head is interesting. Links with participants describing an ability to be more calm in different situations? Does this vary for different participants? Is this the only way that they experience it? Embodiment of skills? – to add in as a question for participants. Next steps It has been useful to have a range of views to support identification of important themes. It's surprising how much different types of participants agree. It seems that more detail is needed from CYP to really understand what they are experiencing during the intervention. Others are limited in being able to identify internal experience of participants and may only observe half of what goes on. Future participants should be CYP.
November 2019	All coding complete – Thoughts around emerging categories Safe and empowering environment This seems to many components and is reported by everyone as being important - There's no pressure – you don't have to talk - You can talk if you want and the facilitator is helpful - "the people here are understanding, helpful, they don't pressure you into anything, and they're just gentle." - "they checked up on you a lot. After every session they asked how it was going and if there was anything we didn't want to do, if there was anything we wanted to try. I feel like the feedback we gave them, they asked for, they wanted to know how we felt about it, that helped a lot." - Where the focus isn't on you – it's on the horse - You feel safe and contained and able to succeed Environment promotes respect of boundaries – both horse and facilitator are responsive to the participant. Participant voices are respected and they are encouraged to use it. The Horse Developing awareness of horse as well as self The horse mirrors your skill development and will only respond if you're doing it right – Horse as a mirror for the self. Important to be able to identify with horse. Interviews suggest seeing the horse overcoming a challenge is showing participants that they can do the same thing It's a bit like the process of teaching – you learn better when you're teaching others – so the participants learn through teaching the horses how to feel safe to do challenging tasks and feel good about their achievements? The Intervention Celebrating and recognising achievement feels important… Changes – Confidence Confidence built up BECAUSE tasks were hard and BECAUSE of assertiveness needed to communicate with horse and BECAUSE of success Stepping out of your comfort zone and doing something different where you get positive feedback, recognition and it challenges your belief about what you can do Parents/Referrers/Others Parent/other witnessing at the end is like another graded exposure for some – overcoming a challenge again?

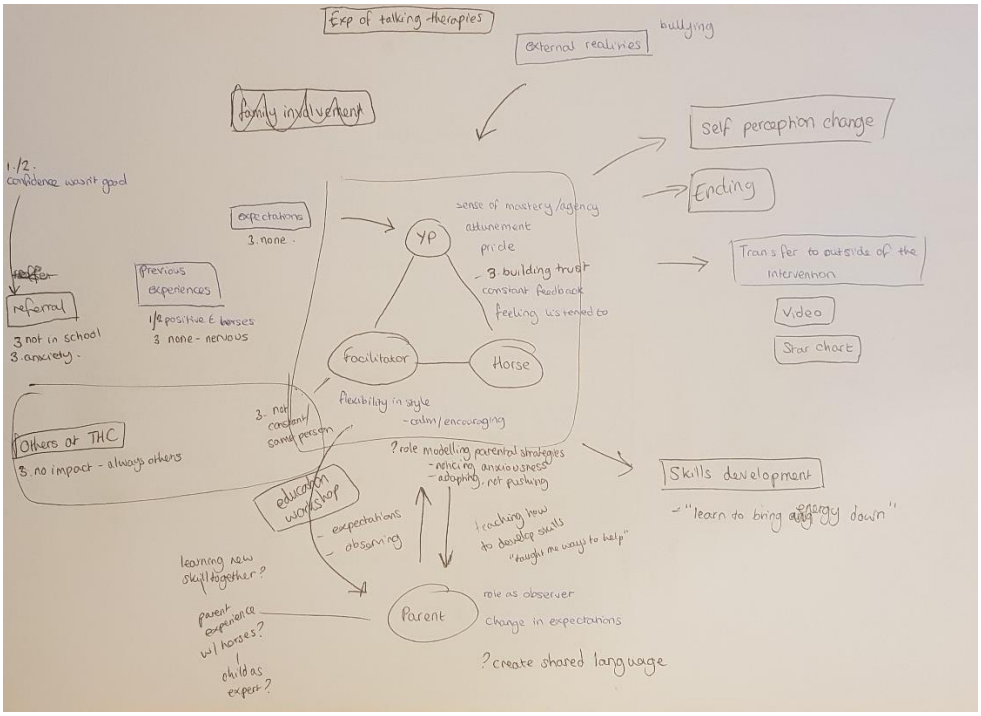
	Parents reinforcing/witnessing/validating changes Ability to attune to own body language and regulate it seems distinct from communicating with the horse – you could do all of that without a horse present (moved all codes for communicating through body language with horse to Horse section) <u>Changes – Relationships</u> Having a good relationship shifts expectations for future relationships: "Because when I came I was like, I can say hello or I can run away, it made me think of that. Then when I met the people they were actually really nice so it made me think maybe teenagers aren't that scary. It made me think that." <u>Thoughts</u> Thinking about how it would be similar/different if a different task e.g. acting? <u>Loss/New identity?</u> Needing more/going back - Some participants describing deterioration in skills - Developing new identity connected to horses? <u>Considering Core Categories</u> Most codes appear to fall in two categories – - Containing and empowering environment - Overcoming a challenge However, these don't capture all codes. Excludes change, role of supporters? These wouldn't fir in these categories. Could categorise into factors - Creating change - Maintaining change What falls under **creation**? - the environment/participant/process /external support/recognition of achievement What falls under **maintenance**? - External support - Crystallisation? - Loss/return/remember cycle? Where does **change** fit it? Separate category? However, there is much less content within the maintenance side. What do all codes have in common? All identify possible factors affecting change? Could this be a core category? It feels broad but perhaps this reflects the fact that I am asking a very large question?
December 2019	<u>Reviewing coding and interviews</u> Re-categorising based on emerging theory. <u>Feeling Safe/Comfortable –</u> seems to be a combination of the environment (aka. Features of the entire course) and individual facilitators Includes categories – no pressure / focus on horses – e.g. I feel like this definitely takes a lot of the focus from what you're going through, because I was very embarrassed about what I was going through… Here your centre of attention is the horses, but as well as... because you believe you're helping the horses, but also you are helping yourself without noticing really until the end, and that definitely took away the embarrassment and shyness.

	No pressure often associated with feeling able to talk to facilitators Positive experiences of interaction with facilitators * practicing talking in this environment and having positive outcomes facilitated conversations and confidence outside of the environment <u>Changes – Pride in self</u> think they were proud that I was doing it because I was hesitant to start with. Then [teacher] said that [teacher] called mum and then she said mum told her that I was going to get to ride the horse and she was like, 'Wow, that's amazing,' because apparently I was the second person from that school anyway that got to ride the horse. That made me proud as well! = suggests pride of supporters boosted own pride <u>The Core Category</u> Is it "factors affecting change in an EAI for CYP". Or should it capture something more insightful/unique to this model? e.g. the journey of participants through an EAI to become empowered and hopeful or – how aspects of an EAI facilitate empowerment and hopefulness in CYP - how an EAI creates empowered and positive <u>The participant</u> Brings own past experiences – relationship with others; beliefs about self; past experiences with animals Has differing expectations – positive vs negative experiences and expectations formed a unique balance of hesitation and motivation about engaging with the intervention, and form a unique starting point from which to experience the EAI. These can be helpful – motivating - positive expectations/hopes - positive past experiences Or unhelpful – hesitating - negative past experiences of self and others - negative expectations of self and others Unique baseline – forms basis on which EAI is delivered and experienced Doesn't need to be 'ready' Can affect engagement <u>Readiness?</u> many interviewees suggest that timing doesn't matter – except referrers who thought that some past drop-outs were due to timing? <u>Changes</u> Is it empowerment? Confidence? Or feeling able? Or improved self-efficacy/self-concept?

Appendix K: Theory development

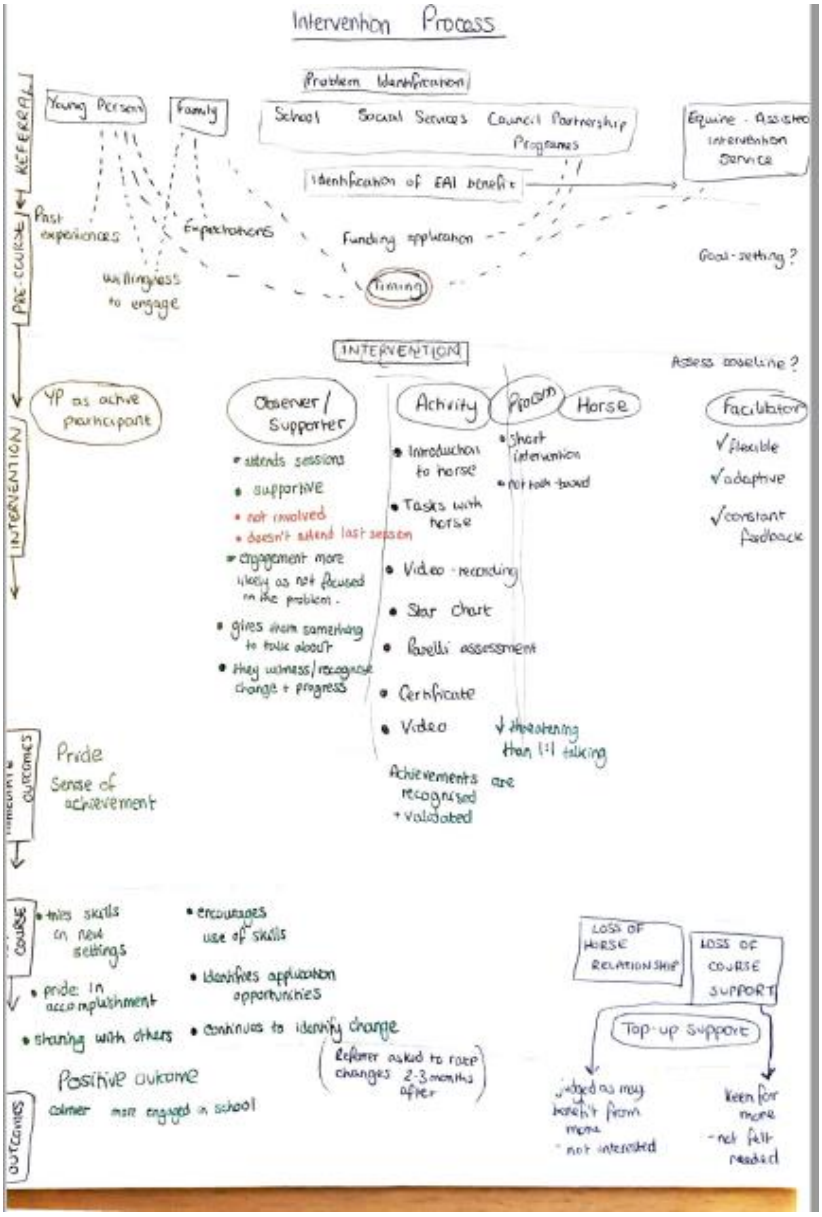
A selection of photos of diagrams developed throughout the study. These show the emerging factors that appeared to be linked to change. Initially, the intervention was characterised by the interaction between the young person, horse, and facilitator. Emerging codes were related to this process and possible relationships were theorised.

<u>August 2018:</u>



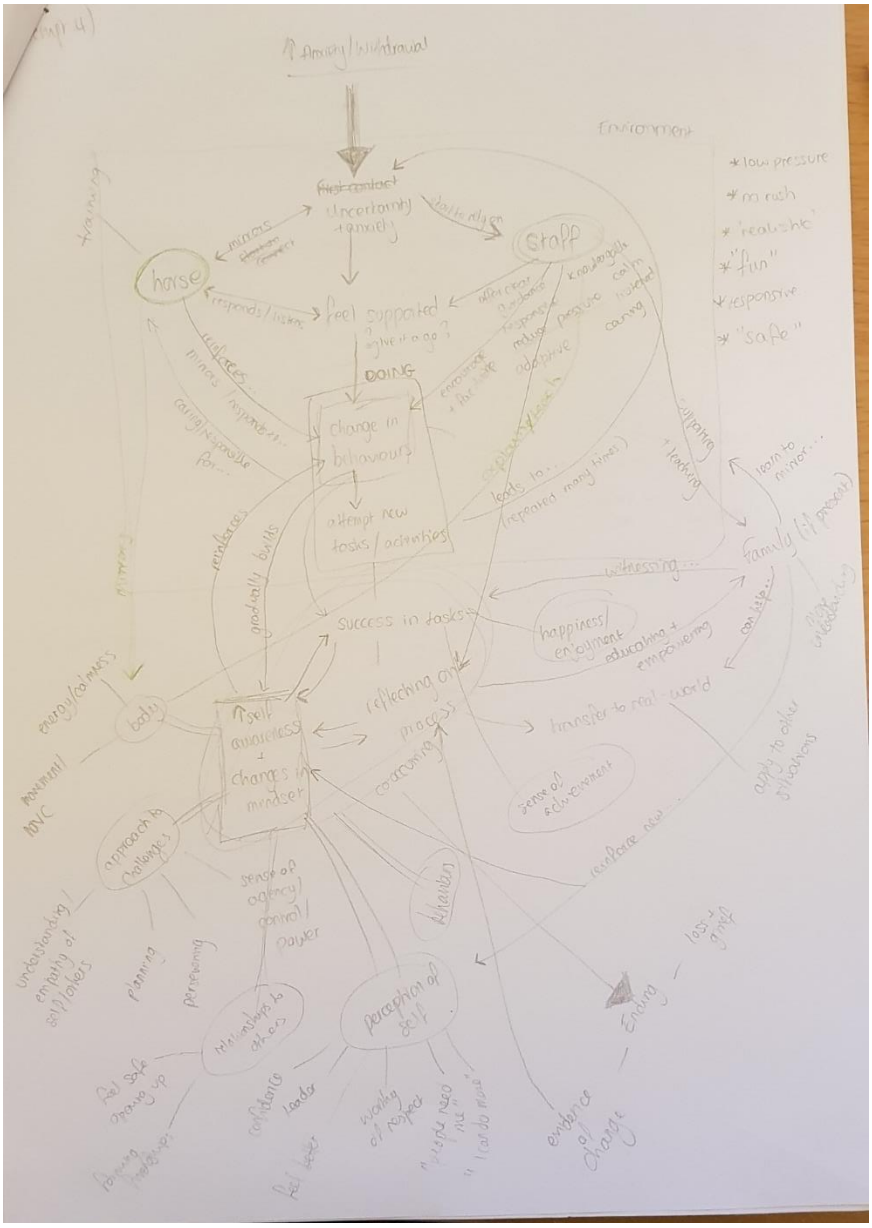
October 2018:

An alternate approach to mapping out the intervention tried to capture the distinct phases in which factors affecting change occurred. Many features of the EAI continued to emerge and it was difficult to identify at this stage which features were important and why.



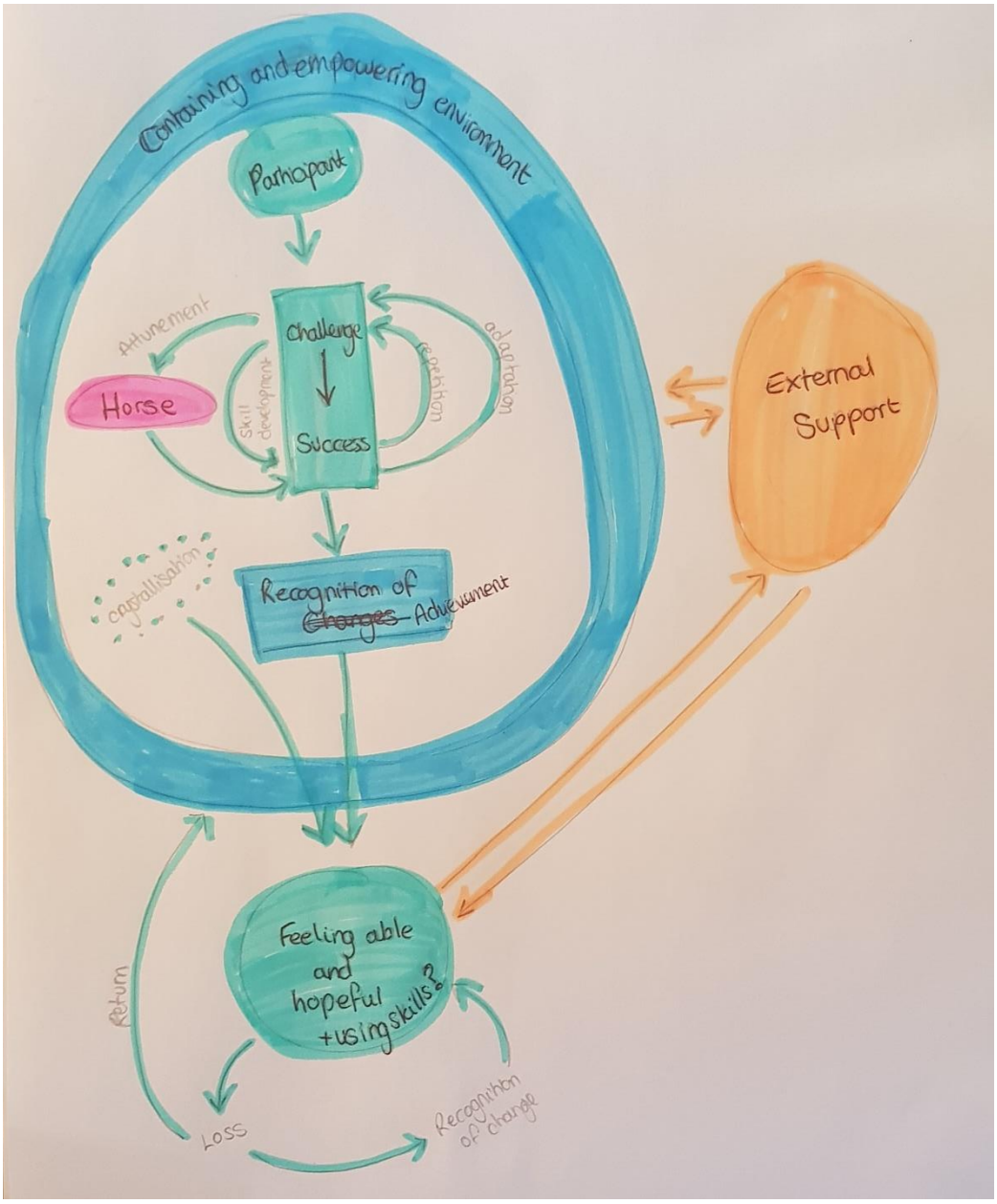
November 2019

After further interivews and recoding of data to focus more on the meaning behind the various factors that were reported to play a role in the intervention, the following diagram was created in attempt to highlight key processes and their relationships. At this stage, the facilitator and the environment were considered separate concepts. Changes were not synthesised, with all possible effects listed.



November 2019

A later, more simplified theory, where the role of the facilitator and environment have been merged and defined by their shared features. A cycle of challenge to success is shown with further detail of factors influencing this, and highlighting the role of the horse as part of this process. Crystallisation is distinct from recognition of change as it was unclear if this was a key component of the course or something all participants experienced.



Appendix L: Abridged research diary

Excerpts from research diary. Non-specific to theory development.

Date / Title	Notes
January 2017	<u>Reflections on personal beliefs and motivations relating to EAIs</u> - I have worked with patients, and have friends who have really benefited from contact with animals in recovering from mental illness and developing better wellbeing - I am interested in how pet ownership affects people's wellbeing (although I realise this would be hard to study in a RCT way due to issues around giving people animals and possible confounding issues around people's attitudes, social class, and lifestyles in order to be able to have a pet.

	- Coming from a background in PD and Recovery Colleges – I am very interested in engaging people who are 'hard to reach', may struggle with emotional regulation, and are not at a stage where they are able to engage in typical therapy. - I am very interested in the future potential of combining AAT with recovery models – making changes sustainable and controllable by the SU to maintain - In my current placement on inpatient wards, I can see potential benefits for acute inpatients who may benefit from aspects including meaningful activity and a safe source of comfort and affection. I wonder also if people learned to train animals if they would learn about their own psychology in the process? I saw an article about dog training in prisons that suggested this?
March 2017	Part B will involve getting people to explain their experiences. I need to bear in mind that the young people involved may have trouble articulating their experiences in light of their preference to engage in a non-talk based therapy. It would be useful to capture a range of perspectives in order to gain further insight into change processes – this could guide future questions with CYP? I could also consider using videos as a prompt for discussions about how change works – similar to recent research being done by Hemingway? It would be good to do a bracketing interview – get out my views – useful for quality assurances Have a think about what version of grounded theory I would like to do – Glaser? Straus? Consider epistemology – critical realism? Social constructionist?
May 2017	<u>Visit to the service HQ</u> Me and a colleague watched a woman being taught in her 4th session – you could visibly see her changing her body language in order to direct the horse and getting clear feedback from the horse's responses. I noticed how we interpreted the situation and training from a more psychological perspective - recognising some of the skills being taught and made connections to transferability other aspects of her life beyond the current context - which she probably was not doing as she was so focused on the session today. The horse was very engaging . I wonder if the sense of threat/anxiety leads to what staff suggested was "enforced mindfulness" & the process includes "sneaky psychoeducation" We had a go with the horses ourselves and found it difficult to get used to the presence of the horse and to physically relax and learn to be clear with our body language From discussions with staff at the service – • Primarily referrals are from CAMHS/TAF/DAT • Potentially should be very easy to work with children/adolescents as well as their carers/family/support workers/referrers who sometimes engage in the programme with them • Potentially may be better to interview them experientially – meet them whilst they are going through the process – maybe sit in on final 'star' meeting, maybe record their sessions to discuss later – get them to explain it – or get them to explain what's happening at the time • We discussed concerns about doing this at the time – may affect outcomes/results/engagement? Risk of participants feeling pressured? Having had less time to make sense of experiences? • Maybe better to do interviews shortly after completion of the course
March 2018	<u>First round of interviews completed and transcribed</u> Transcribing took a lot longer than I thought it would. I found that I deviated from my script a lot in order to be responsive to what people were saying, and to try to put participants more at ease. Need to be clear about this flexibility with the interview schedule. I've made some first attempts at coding but I have no idea if this is right or not. Further questions to add to interview schedule: • What experience do they have of animals/horses? • What are their prior expectations?

	<u>Discussion with Supervisor</u> Possible factors that are emerging already: • Sense of mastery • Sense of agency • Attunement to horse – shift from horse listening to her learning • Scaffolding – co-regulation • Parallel process – them learning from facilitator and then horse from then
August 2018	<u>Four interviews completed</u> Need to be careful not to be leading in interview questions. It's hard to find a balance of being relaxed and responsive to the participant, but also asking questions clearly. For examples - Comparison to talking therapies. Word more carefully! o This is quite a different type of support from the usual talking therapies that people are offered. I was wondering if XX has/have experienced before this and what your/their experiences were like about each different type of therapy? How were these different? Had other types of therapies been accessed before? How did this compare to those? It seems as though people have variable parent experiences? Some not helpful at all – good to get child views on parent support, and other parent views.
May 2019	<u>Eight interviews completed</u> I feel like I have no idea what I'm doing with my MRP. I feel so behind and overwhelmed and anxious that it makes me feel physically sick. I don't feel like I fully understand what I'm doing. I've finished transcribing 8 interviews but I don't think they're very good. I feel like I'm listing features of the intervention rather than really digging down to what these mean for people/how they really affect them. I worry that I didn't stick closely to my questions so although I asked about each theme, my questions often weren't consistent or clear and may have been leading or encouraging of only positive views. I don't think I fully understand how to code. I need to re-read the Urquhart sections on coding. I've been reading the Sbaraini, Carter, Evans and Blinkhorn paper (2011) about how to do a grounded theory study which is very useful. Apparently a lot of people find it hard to do it properly
July 2019	It's time. Time to hit the MRP and hit it hard. I've been offered a job and that means that I really, REALLY, need to get this done. I don't want it hanging over me. Okay. Let's think about it. At my last meeting with my supervisor we were talking about coding. I told him that I'd finished coding everything that I have. I told him that I wasn't happy with the coding that I had and that I thought it was sticking too closely to the theory of change the service had outlined. I told him that I wanted to redo it. He agreed to also go through some that I sent to him before we next met. I think I need to remind myself what a grounded theory paper looks like. Where to start? What's the priority? Part A I can do anytime. Part B needs to be started now. I'm due to discuss with my supervisor next week and get cracking on reviewing the coding and planning who to recruit next.
September 2019	I'm nervous. What about? I think more talking to my supervisor than anything. I keep thinking that I don't know how to do grounded theory. Am I doing it? Is this right? I don't know. Maybe I should have re-read some Urquhart chapters again… I have a LOT to do. I need to remember that. It's going to be busy… I need to keep pushing.
	<u>Phone call with Supervisor</u> Discussed ideas around there being distinct stages affecting change – pre-course/during/ending/post-course We were wondering if there is a parallel processes between child & horse, child & facilitator, parent & facilitator, parent & child, etc? A bit like a reciprocal relationship in CAT – empowering to empowered / supportive to supported? Thoughts

	- Are CYP learning it physically or mentally? Is it a physical embodiment of learning? Or changing thinking patterns? - 'transformation through calming' - Being given responsibility and trust - shift in relationship – expectation to succeed - Building a relationship with the horse? - Transferability of skills?
	<u>Thirteen interviews completed</u> Thoughts: - Main skills learnt for both participants 9 and 10 seems to be calming/getting neutral/ learning to notice their emotional/physical state, pausing and calming. Taking a deep breath. - Having a range of horses is important - Are people identifying with the horse – seeing themselves in the horse? Identifying horses as anxious/not liking touch/mischievous - The facilitators are ESSENTIAL – people seem to have got into negative patterns with adults/teachers/parents/others where interactions feel repetitive and unhelpful – YP don't feel heard or able to go at their own pace. Facilitators listen, ask questions, tune into how they are feeling, don't rush them. "They know what they're doing". "There's a plan but it's flexible". They trust them and expect them to succeed. - Facilitators teach and guide how to calm and notice when not calm – YP then practice and horse confirms if they're doing it well - Idea of learning that calming is important for the horse – that their body language/behaviour may have a negative impact on the horse – calming is being caring. - Idea of respect – feeling treated like an adult/heard/given choice/not forced to do things Self-reflection on questions: - Make sure to ask about the horse – does it matter that it's a horse? What makes the horse important? - Feel free to guide people if it's not relevant – keep it specific to the course! - How did they know the facilitators were friendly? What did they do that showed that people could go at their own pace? - Idea of identifying with the horse? - How easy or hard was it to use the skills learnt here outside of the course? What made it easy/hard?
November 2019	<u>All interviews and coding completed</u> <u>Meeting with Supervisor</u> - I've spent a lot of time trying to map out the key factors and their relationships. - The theory needs to be simpler – pick out just KEY parts – the rest can be described in the text - Perhaps the final phase – ending – loss / transfer to real world is a cycle/back and forth. It's not one or the other but both at varying times. - Important to include the deterioration of skills. Although not reported by all participants – likely to be experienced by others if current sample includes only 'successful' participants
December 2019	<u>Meeting with supervisor</u> - Discussing attempts at drawing together a diagrammatic theory of change. Theme 1: Participant - Category of motivation could fit within expectations - Past experiences could also include difficulties/presenting problems Theme 2: Intervention - Main processes could be 'overcoming a challenge' - Suggested combining processes of recognising achievement and crystallisation – both occur AFTER the other two intervention processes.

	- Three main aspects of intervention as a triangle? Or T-shape with first 2 processes feeding into the last? Theme 3: Containment/Empowerment - Holding CYP in high esteem? - Belief / giving hem agency Theme 4: Changes / Impact after course - Essentially – did it change or not Theme 5: External support - Helpful vs unhelpful Reflections: important that theory highlights that it isn't all about the interaction with the horse – significant roles of environment/facilitation and external support.

Appendix M: Bracketing Interview

A bracketing was completed with a colleague in February 2018

Questions as part of this included:

QUESTIONS

- Tell me about you (gender, race, beliefs, religion, our own value system)
- What led you to choose this project?
- What are your hopes around this type of work?
- Is this something that you have any personal experience of?
- Do you have much experience with animals or horses? What do you think of them?
- What do you think of this type of intervention?
- Do you believe this type of intervention is helpful?
- What do you think makes this type of intervention effective?
- How have animals been an influence in your own life?
- What do you think you might find?
- What would you hope to be able to contribute to this field of work?
- Service user voices/experiences
- Why research method /analysis design
- Any personal interests/conflicts of interest in this project (e.g. successfully getting qualification)?
- What are your assumptions about animals?
- Is there a potential role conflict (i.e. between collecting and analysing data and organising)
- What would you be worried about happening/what could go wrong/happen that we don't want to happen?
- How do we feel about the people that we are interviewing?

Summary based on bracketing interview and perspective at end of research

I actively reflected on my own perspectives on the research topic during a bracketing interview completed at the beginning of the research. I have summarised here some of the key points from that interview as the changes in my own position that occurred throughout the research.

I am a 29-year-old female trainee psychologist. I grew up with lots of contact with animals, having family pets in my home and in my wider family's homes. I have always taken a lot of comfort from animals. I have often experienced anxiety throughout my life and found that I could always connect easily to animals who provided a more easy, stress-free relationship. I have had little experiences with horses and find them quite intimidating although I can imagine that people feel empowered from being able to interact with them.

I'm very interested in the idea of animals being used therapeutically. I think they offer benefits not experienced in normal talking therapies. I believe this includes the experience of closeness and affection, of feeling in power/responsible/seeing the influence of my actions, and a way to learn about basic psychological principles. Having had rescue dogs growing up, I learnt how their behaviours were shaped by their experiences, and how factors including rewards, consistency, and

positive experiences could change their behaviours. I have often compared events in my daily life to the basic behavioural principles that can be seen in animal training.

At the outset of this research I was motivated to think about how the success that the service has achieved could be translated to wider interventions. I was curious about what aspects of the course were important and hoped that by understanding this, I could offer guidance to other practitioners hoping to incorporate animals into interventions.

Research was started before I completed a literature review in the area, preventing this influencing initial theory development. After completing a literature review, my beliefs that EAIs could be helpful were strengthened, and I was even more curious to find a way to synthesise the information that was emerging about change. Changes were observed across so many domains, and so many aspects were considered helpful. Finding a way to draw these together seemed beneficial, although very daunting.

Appendix N: End of study report for ethics panel

19th December 2019

Dear Professor Margie Callanan,

RE: Developing a grounded theory of the mechanisms of change in an equine-assisted intervention

New Title: "TAKING CARE OF A HORSE CHANGED MY LIFE": DEVELOPING A GROUNDED THEORY OF CHANGE IN AN EQUINE-ASSISTED INTERVENTION FOR YOUNG PEOPLE

I am writing to inform you that this study has now concluded. The study received approval from the Salomons Ethics Panel in November 2017 and research actively began in February 2018. No ethical issues or concerns arose during the study.

Please find below a summary of the research. A separate end of study report has been emailed to participants.

Please do not hesitate to contact me if you have any questions.

Kind regards,

Fiona Thornton
Trainee Clinical Psychologist
Salomons Centre for Applied Psychology
Canterbury Christ Church University

Summary of Research:

Background: Equine assisted interventions (EAIs) offer an alternative therapeutic approach for children and young people (CYP), particularly those who struggle to engage in talking therapies. Research indicates encouraging emerging evidence supporting their use. However, evidence is limited by a lack of standardisation in interventions, research methodologies, and outcomes. This variability has been attributed to the absence of an underlying theory. As such, there is a lack of clarity regarding the mechanisms and process of change in EAIs, and no consistent guidance for clinicians to promote effectiveness. This study aimed to develop a theory of change in an EAI based on the experiences of people involved in an intervention.

Method: Interviews were completed with thirteen participants, including seven young people who had completed an EAI intervention and six supporters (parents, referrers, and facilitators). Interviews were analysed using grounded theory methodology.

Results: A theory of change highlighted key components that were reported to affect change. A diagram is shown below.

- The participant
    - Individual differences in participant experiences and expectations were considered as influencing successful engagement and outcomes.
    - The EAI was viewed as being able to help *anyone,* but not being successful for *everyone*.
- The intervention: This included three core processes
    - Overcoming a challenge: Activities were perceived as hard but achievable. Participants had to develop skills in order succeed.
    - The horse as a partner: The horse reinforced correct skills and increased self-awareness through mirroring. The horse was perceived as supportive, gentle, and attentive.
    - Recognition and crystallisation of achievement: Successes were recognised and validated. Participants made sense of their experiences in different ways – some experienced embodied changes, and others interpreted aspects of the course as a metaphor for their daily life.
- A safe and empowering environment
    - Facilitators were kind and understanding, leading participants to feel comfortable and not pressured.
    - Facilitators were encouraging, trusted participants, gave clear instructions and supported them to do tasks independently.
- Change
    - Participants felt 'more able' – feeling more confident and able to use new skills. This was connected to the intervention.
    - Participants felt 'more hopeful' – feeling more positive about the future and relationships with others. This was connected to the safe and empowering environment.
    - Over time, some participants found changes were gradually lost. This led some to want to return to the EAI.
- External support
    - Supporters could facilitate change through supporting participants to attend, validating change, and learning new skills. However, the absence of this support could also impair change.

Conclusion: The proposed theory offers a new way of understanding how EAIs can facilitate change. Key components were supported by all types of participants, although some variability in perspectives was apparent within these categories. Variation was understood as reflecting the different perspectives, limitations and biases of different participant types. The theory offers just one way of interpreting the data. The theory showed similarities with components identified in wider research and other psychological theories. Implications for practice and future research were discussed.

Appendix O: End of study report for participants

Dear Participants,

Thank you so much for taking part in this research – it couldn't have been done without you.

Please find attached a summary of the research which explains what we did and what we found. I hope you find it interesting.

Please feel free to contact me if you have any questions.

Kind regards,

Fiona Thornton
Trainee Clinical Psychologist

Salomons Centre for Applied Psychology
Canterbury Christ Church University

How do people experience The Horse Course? Developing model of what supports change

Canterbury Christ Church University

End of Study Summary

Thank you for taking part in this research study which was conducted by Fiona Thornton (Trainee Clinical Psychologist) and supervised by Professor Alex Hassett. The study received ethical approval from the Salomons Ethics Panel at Canterbury Christ Church University.

Aims

We know that courses like TheHorseCourse can lead to positive changes for young people who may have social, behavioural, or psychological difficulties. However, lots of courses are run differently, and we do not know what parts of the courses support these changes to happen. This study aimed to develop a theory that could explain what parts of the course were important, and how they led to changes for young people.

Methods

Thirteen interviews were completed with seven young people, two referrers, two parents, and two facilitators from TheHorseCourse. The interviews were evaluated using a method called Grounded Theory. This involved the researcher going through each interview and making notes about what each participant said, and how the researcher made sense of their experience. The researcher combined these notes to identify important parts of the course, how these parts connected, and how they led to changes.

Results

The findings of the study are summarised in this 'theory of change'. The theory suggests that there were five main parts of TheHorseCourse that related to change.

1. **The Participant**

Every participant had different experiences and expectations about the course. The course could be helpful for *anyone* but didn't always work for *everyone*.

> *"I don't really like talking about my feelings, I thought this is going to be the same"* (Young person [YP] 5).

2. **The Intervention**

> *"I never really noticed how tense I was until I was put with the horses and then when I was tense they would be tense, when I was relaxed they were... I learnt to see it on myself as well as seeing it on them"* (YP 7)

Participants had to 'overcome a challenge' where activities were hard but could do them in the end if they used new skills.

The horse helped participants to succeed by responding if the they did the right thing. The horse was calm and listened.

Participants felt good about doing well. Their success was recognised and celebrated through feedback and items (such as certificates and videos) that they could share and keep.

Participants made sense of what they had learned, and learnt how to apply it to other situations. Some people physically felt more calm and able to relax. Other people used their experiences as metaphors for their everyday life.

3. A Safe and Empowering Environment

Participants felt comfortable and not pressured. Facilitators were kind, understanding, and adapted sessions to suit what participants needed.

The facilitators were encouraging and supportive. They explained clearly how to do things, and trusted participants to do it on their own.

"As her confidence built, [the facilitator] just eased her into other tasks that she could do, and if [my daughter] wasn't having a good day then we'd just take a step back, and nothing was every pushed. It was always worked around how [my daughter] was feeling on the day" (Parent 2).

4. Changes

"If you saw me and then saw me how I'd changed now, you would think I was a different person. I would be screaming at teachers, screaming at kids, hitting kids, throwing things in classrooms and stuff. And now I feel more calm and I just feel like this is what's made me calmer, coming here" (YP 3)

After the course, participants felt able to do more than they used to. They felt more confident and felt able to apply the skills and lessons that they had learnt to new situations.

Participants also felt more hopeful. Some felt happier and believed that they could do more in the future. Some thought that things were more likely to be okay and that people would be nice.

However, some participants felt that these changes started going away over time. This led some participants to want to do the course again or to volunteer.

5. External Support

Parents, teachers, referrers, and other supporters could help changes to happen by helping participants to get to each session, being encouraging, recognising changes in the participant, and learning new ways to help.

"If I can get the parent to attend the last session – it's just a shared experience that they can acknowledge that there has been progress... And that is quite a special time, very often, at the end." (Referrer 1).

Where participants had less support, or supporters weren't able to do these things, participants found it more difficult to complete the course or to experience changes.

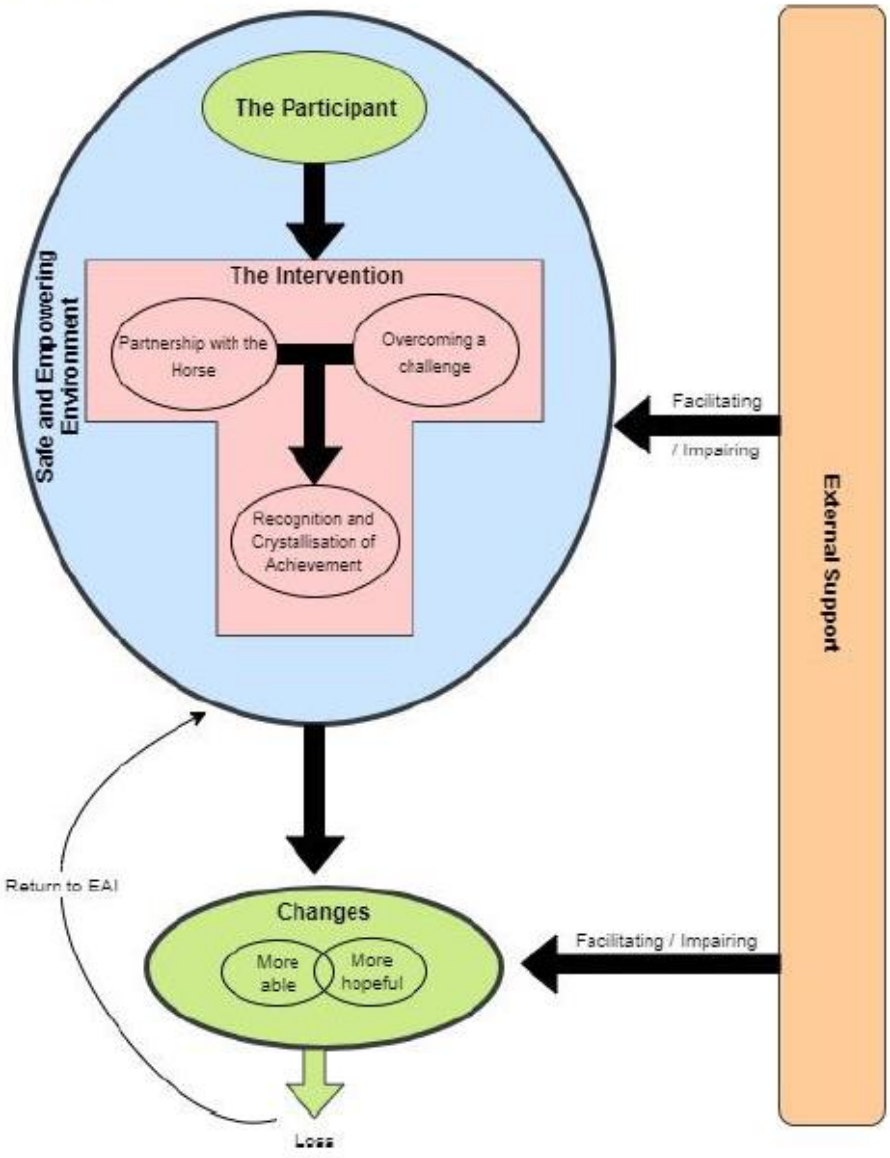
Summary

The theory gives us a new understanding of how courses like this can lead to changes. It tells us what parts of the course might be important. These parts were similar to some findings from other research. All the different types of people that were interviewed described similar things as being important. This theory was just one way of making sense of the findings, and other people might make sense of it differently.

Future directions

More research is needed to see if what was found would be the same in other courses, with other people, and by other researchers. With more research, we can build on this theory until we are more confident that all of the important parts of courses like this are identified, that we fully understand how the different parts connect to each-other, and how they affect whether people experiences changes.

Diagram of the final theory:



Appendix P: Submission Guidelines for Chosen Journal

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